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Paper TRADE JOURNAL

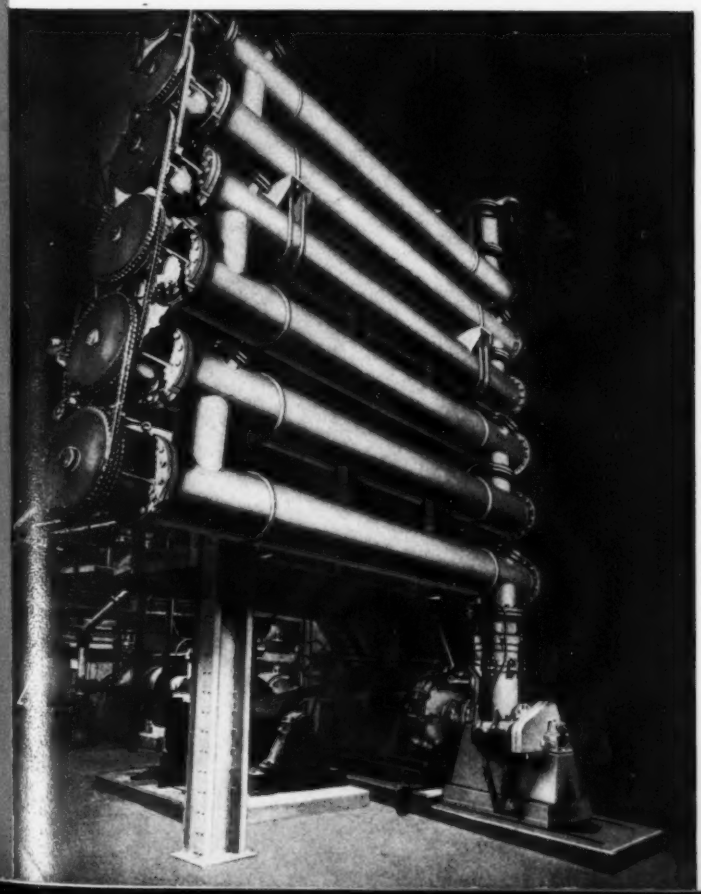
REG. U. S. PAT. OFF.

VOLUME 127, No. 6 AUGUST 5, 1948

THE CHEMIPULPER

as used with the Asplund Defibrator

(Patented and Patents Pending)



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A single, compact unit for continuous production of various grades of wood pulp with cooking factors of time, temperature and chemical adjustable to conform to variables in raw materials and to accurately meet predetermined requirements throughout the paper and paperboard industries.

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- Reaction Chamber with continuous flight conveyor screws insures positive and uniform feed from inlet to discharge end of chamber.
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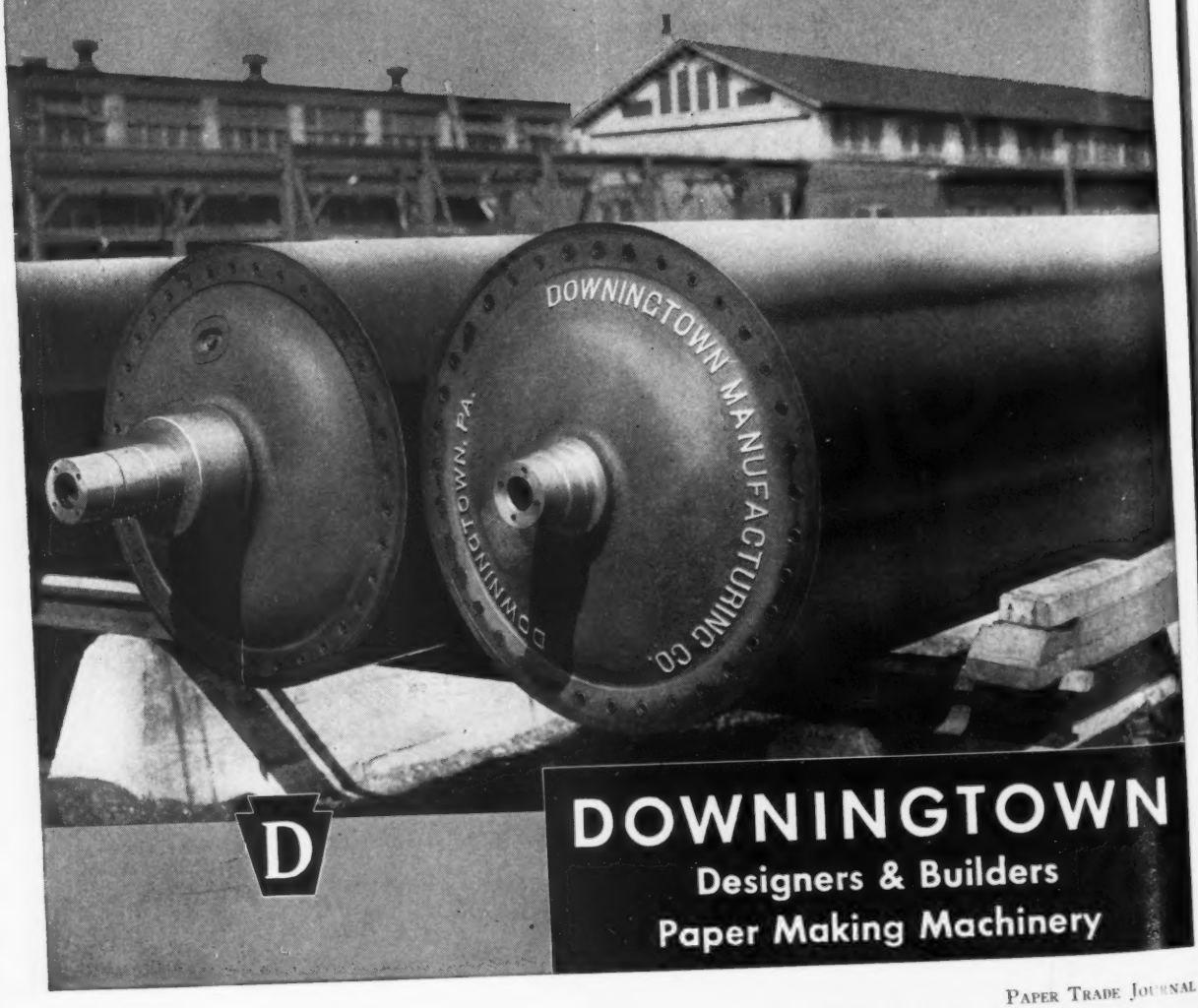
At first glance they may look like any other dryer rolls. But look closely at the ends, front and back. Notice the Streamlined S-M-O-O-T-H-N-E-S-S. No projecting bolt heads. Recessed hand hole cover plate. Nothing to catch onto a cleaning rag. We believe these are the "World's Easiest to Keep Clean." This is typical of the numerous improvements and refinements in post-war Downingtown Paper Making Machinery . . . Downingtown Mfg. Co., Downingtown, Pa.



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DOWNINGTOWN
Designers & Builders
Paper Making Machinery

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CALENDAR OF COMING EVENTS

ASSOCIATION EXECUTIVES: Please send us your meeting dates and locations for this column as far in advance as possible. No charge for publication.

AUGUST 16-17: TAPPI Plastics Conference. Institute of Paper Chemistry. Appleton, Wis.

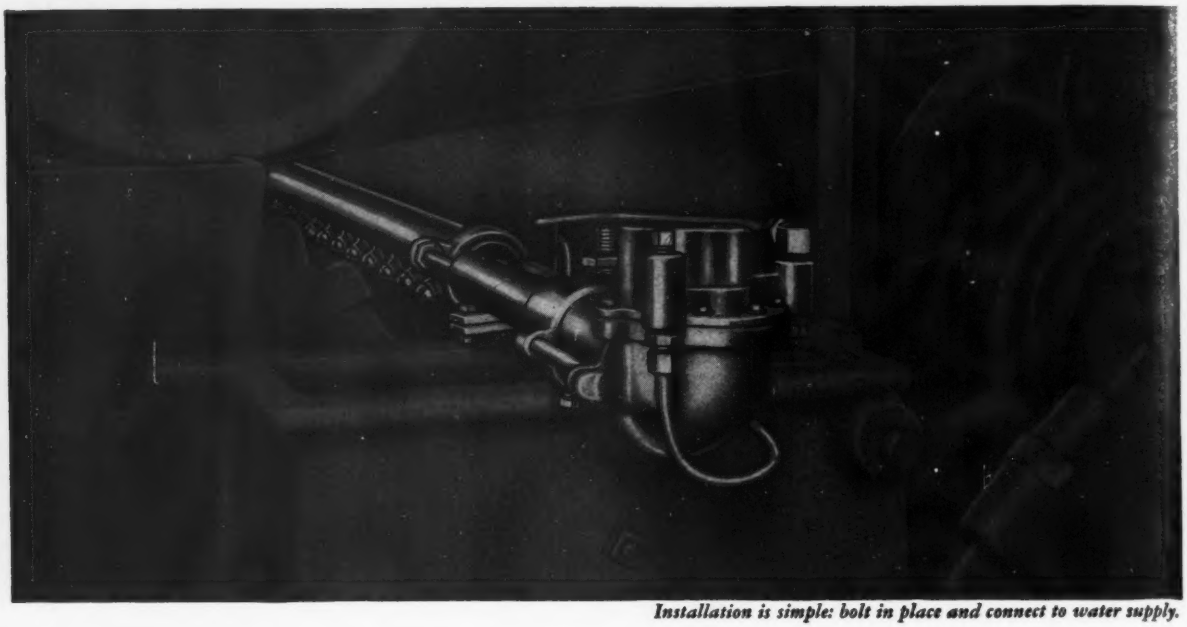
AUGUST 17-20: TAPPI Fundamental Research on "Physical Constituents of Wood." Madison, Wis.

SEPTEMBER 8-10: Technical Section, Canadian Association. Hotel Vancouver, Vancouver, B. C., not Harrison Hot Springs, as previously announced.

SEPTEMBER 27-29: TAPPI Mechanical Pulping Conference (Joint meeting with CPPA Technical Section) Poland Springs House, Poland Springs, Maine.

OCTOBER 11-14: TAPPI Testing Methods Conference at Mellon Institute, Pittsburgh, Pa. Headquarters, William Penn Hotel.

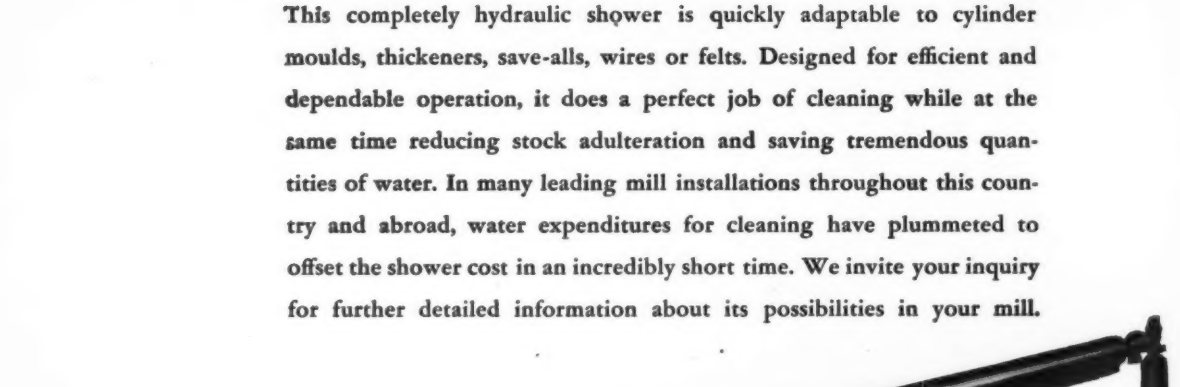
OCTOBER 25-28: Third Engineering Conference of the Pulp and Paper Industry Statler Hotel and Westinghouse Electric Co., Auditorium, Buffalo, N. Y.



Installation is simple: bolt in place and connect to water supply.

THE *Broughton* S-10-H HYDRAULICALLY OSCILLATED SHOWER

This completely hydraulic shower is quickly adaptable to cylinder moulds, thickeners, save-alls, wires or felts. Designed for efficient and dependable operation, it does a perfect job of cleaning while at the same time reducing stock adulteration and saving tremendous quantities of water. In many leading mill installations throughout this country and abroad, water expenditures for cleaning have plummeted to offset the shower cost in an incredibly short time. We invite your inquiry for further detailed information about its possibilities in your mill.



Example in Economy: with usual nozzle spacing (2¾") and shower oscillating thru a distance of 6" at a rate of about 3½ cycles per minute the S-10-H requires *less than 7 gallons per minute* for each 100" of wire face to do a perfect cleaning job.

A. E. BROUGHTON & COMPANY

Glens Falls, New York

Paper TRADE JOURNAL

VOL. 127, NO. 6 REG. U.S. PAT. OFF. AUGUST 5, 1948

Additional Increases in Freight Rates

Effective About August 15

NEW YORK — Freight rate increases authorized by the Interstate Commerce Commission on July 29 mean increased costs for the paper industry. In a bulletin on this subject to members of the American Paper & Pulp Ass'n., dated July 30, E. W. Tinker, executive secretary, said:

"Late yesterday, a final order in Ex Parte No. 166 was issued by the Interstate Commerce Commission to be substituted for the previous interim increases.

"Basic freight rates and charges (i.e., rates in effect October 12, 1947) are permanently increased as follows: Within Eastern territory, 30 percent; Within Southern territory, 25 percent; Within Zone I of W.T.L. territory, 25 percent; Within Western territory, other than Zone I of W.T.L. territory, 20 percent; Interterritorially between Southern and Western territories, and between those territories on the one hand and Eastern territory on the other, 25 percent; and Between Western territory, other than Zone I of W.T.L. territory, and Zone I of W.T.L. territory, 22½ percent.

"There are numerous exceptions, including the following of interest to the paper and pulp industry:

"Cotton, in bales: subject to finding 1, maximum 11 cents per 100 pounds.

"Anthracite coal, bituminous coal (except lignite), and coke: increase 20 percent, maximum two cents per 100 pounds.

"Lignite coal and lignite coal briquettes: increase ten percent, maximum one cent per 100 pounds.

"Subject to the next two succeeding paragraphs, when coal or coke is transported by water preceded and followed by rail transportation, the water transportation not being subject to our jurisdiction, the aggregate amount of the rates or rate factors subject to our jurisdiction shall be considered as the rate to be increased, and be subject to a single increase.

"The increase in rates on coal to East St. Louis and Alton, Ill., when for movement beyond by barge to points on the Mississippi River, Winona, Minn., and north, shall not exceed 16 cents per net ton from Illinois mines and 20 cents per net ton from Western Kentucky mines, exclusive of dumping and switching charges.

"The increase in rates to the North Atlantic ports, Hampton Roads and north, when for movement beyond by water in coastwise service and in the rates from New England ports to the interior on coal reaching such ports by water, shall not respectively exceed 20 cents per net ton.

"Clay, all kinds not otherwise specified in this finding, but including specifically common, fire and china clay, pyrophyllite and fullers earth; . . . In closed cars, or in open cars with the lading protected by tarpaulins or similar coverings, subject to finding 1, maximum six cents per 100 pounds.

"Salt (sodium chloride): subject to finding 1, maximum three cents per 100 pounds.

"Sulphur: increase 20 percent, maximum nine cents per 100 pounds.

"Logs, butts, bolts, pulpwood, and fuel wood, all of native wood, Canadian wood, or Mexican pine: subject to finding 1, except that within eastern territory the increase shall be 25 percent.

"Lime; . . . subject to finding 1, maximum six cents per 100 pounds.

" . . . petroleum, in tank cars; . . . subject to finding 1, maximum ten cents per 100 pounds.

"Woodpulp; . . . subject to finding 1, maximum 14 cents per 100 pounds.

"Salt cake (sodium sulphate): subject to finding 1, maximum six cents per 100 pounds.

"Scrap paper; rags; . . . subject to finding 1, maximum 11 cents per 100 pounds.

"These increases will become effective about August 15."

More Fire Prevention Needed

WASHINGTON—A sharp increase in forest fires, 90 percent of them man-caused, in the United States during 1947 as compared with 1946 is cited by the Forest Service, U.S. Department of Agriculture, as showing the need for intensified popular cooperation in the 1948 forest fire prevention campaign now under way.

The number of last year's forest fires, acreage burned and damage estimable in dollars is shown in a final compilation of statistics gathered by the agency's field offices, 43 cooperating States, the Soil Conservation Service, the Department of Interior, and the Tennessee Valley Authority.

The report shows that on all forest land, both that being given organized forest fire protection and that still without it, there were in 1947 a total of 200,799 forest fires as compared with 172,278 the previous year; the total area burned was 23,225,932 acres as compared to 20,691,393; and the amount of damage to timber stands, improvements and property was $55,207,646 as against $32,694,113.

Forest Service experts attributed the 1947 increase in the number of fires to the fact that about 32 percent more persons visited the forests last year than was the case in 1946.

The report noted the addition of 9,000,000 acres of forest land to the area now being given organized forest fire protection, bringing the total protected to 543,329,000 acres. The balance of the nation's forest land, or 111,026,000 acres in private ownership is still not being given organized protection. The value of this protection is shown in the report by a breakdown of the overall estimates: Of the 200,799 forest fires last year, 120,429 were reported from unprotected land as against 80,370 on protected lands, but of the 23,225,932 acres burned over, 20,093,477 were on unprotected land as against 3,132,455 on protected land. Of the $55,207,648 damage reported, $30,856,385 was on

(Continued on page 20)

Mechanical stacking of pulpwood in a Borregaard mill.

Norway's Forests Can Pay the Bills

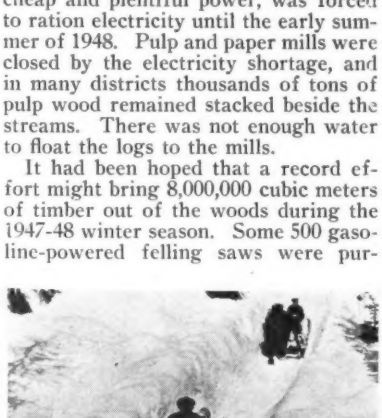
By BENT VANBERG

Like their colleagues in most European lands, Norwegian economists are waking up these mornings with spots before their eyes—spots which generally prove to be dollar signs. Right now, there are plenty of them, but all on the wrong side of the ledger. Dollar credits are becoming increasingly hard to earn, even when your's is the third largest merchant fleet in the world and when your fishing resources are capable of feeding hungry mouths the world around.

Caught in the world dollar vise, with fewer and fewer nations willing to pay dollars for Norwegian goods and services, and more selling nations demanding dollars in payment, Norway, as an importing land, is looking ahead to the coming winter and praying that the ancient Norse weather gods will be kind. For much depends on the whims of the weather man, and on the success of Norway's winter logging. Last year, Norway economists had hoped that a timely boost to wood processing industries would suplement incomes from shipping and fishing and ease the dollar-shortage which was already looming in grim proportions. It was a valiant struggle, but Norway's winter logging in 1947 fell short of its goal by over 1,500,000 cubic meters. The weather man laughed, and Norway's economists dreamt fitfully of rain, buckets of rain —and the Marshall Plan.

The summer and fall of 1947 were among the driest in Norway's history. The broad Glomma River, which supplies power to much of eastern Norway, sank from a surging mass of water to a listless network threading between rocks and sand-islands never before seen by living Norwegians. When the rains finally came, they came too late. Water reserves were at rock-bottom. Norway, known as the land of cheap and plentiful power, was forced to ration electricity until the early summer of 1948. Pulp and paper mills were closed by the electricity shortage, and in many districts thousands of tons of pulp wood remained stacked beside the streams. There was not enough water to float the logs to the mills.

It had been hoped that a record effort might bring 8,000,000 cubic meters of timber out of the woods during the 1947-48 winter season. Some 500 gasoline-powered felling saws were purchased in the United States and Canada, and a nation-wide drive was launched to return experienced loggers to the forests. In certain districts, discarded Bren-gun carriers were turned into tractors. Belts on the tank-like vehicles were widened and special snow-treads were attached. Logging output mounted until mid-December. But then a series of paralyzing snow storms dimmed hopes of meeting the winter's objectives. By July 1948, production for the previous winter was announced at 6,450,000 cubic meters, and not all of that had yet reached the mills.



Norwegian method of hauling pulpwood to loading area.

In Norway, where logging is primarily a winter occupation, and where rivers and streams are the basic transport medium, much depends on the weather. Today, more than ever before, the early rehabilitation of Norway's wood processing industries will mean dollar sales abroad and recovery at home. Granted favorable conditions, Norwegian forests can supply an industry capable of rapid and healthy expansion, and can prove a major corner-stone for a stable post-war economy. Granted an even break, Norway's wood processing industries can recoup war-lost ground in short order.

Today, productive forests cover 24 percent of Norway's land area—an expanse of nearly 28,900 square miles. In all of Europe only six countries possess larger forest areas. Forests of pine and Norway spruce comprise 70 percent of the forest area, with the latter predominating. Annual growth is approximately 10,500,000 cubic meters, with pre-war cuttings of 9,000,000 cubic meters annually. Some 14 percent of the forests are State-owned, 15 percent are owned by firms and corporations, municipalities, and corporate groups, while the vast bulk of 71 percent is the property of private owners. It will be noted that there is a considerably higher percentage of privately-owned forest in Norway than in either Sweden or Finland, where such areas represent 49 and 55 percent of the forest areas, respectively.

In Norway, forests are carefully cultivated and harvested. Better utilization of forest products has long been a matter of concern in a land where a tree is regarded as a valuable, growing thing. Research at the Norwegian Forest Experimental Institute at Aas and at the Norwegian Pulp and Paper Institute at Skoyen have contributed much to the advance of the industry. Following liberation, however, forestry and wood-processing industries resolved to cooperate still further in extending research to embrace the whole field—from studies of conditions governing the growth of trees in the forests to the testing of finished products turned out by the mills.

The result was an entirely new organization known as the Research Society of Forestry and Forest Industries. All members, firms as well as institutions, have pledged membership for a period of five years, with contributions

totalling from $140,000 to $160,000 yearly. The organization's research board has outlined a series of challenging projects, including growth studies, the influence of one species of tree upon another, forest improvements, and reclamation programs. In the industrial sector a long series of by-product studies have been outlined. Plans for the establishment of a Mercantile Research Institute have also been proposed, with comprehensive statistical information to be furnished to all industries with world markets.

Aside from turning out lumber for immediate building needs in the devastated areas, Norway's chief forestry problem is that of raising the production of its wood processing industries. Producing primarily for export, Norwegian pulp and paper mills are now operating at approximately 70 percent of pre-war. Paper and paper board exports in 1947 totalled 275,000 metric tons against 340,000 metric tons in 1939. Production figures released by Borregaard, Inc., one of Norway's largest wood processing concerns, were typical in that the huge Sarpsborg mill, operated at a mere 60 percent of capacity due to the shortage of timber at the mill. Despite lowered pulp exports, paper production was normal during the year, with Borregaard's output of high quality paper establishing a new record.

Norwegian producers are naturally aware that maintenance of a leading position in world markets during normal times will demand both quality merchandise and a research organization capable of devising new and better products. Norwegian plants have already come far. Borregaard has a present capacity of 170,000 metric tons of cellulose yearly, while two other Norwegian firms are developing a new world-product: water-tight paper. Products necessary for the further processing of cellulose are being produced in new Norwegian plants, and the industry is anticipating a world market for plastics, artificial silk, and cellophane. Increased concentration on these specialties will help Norway retain her position in the world market.

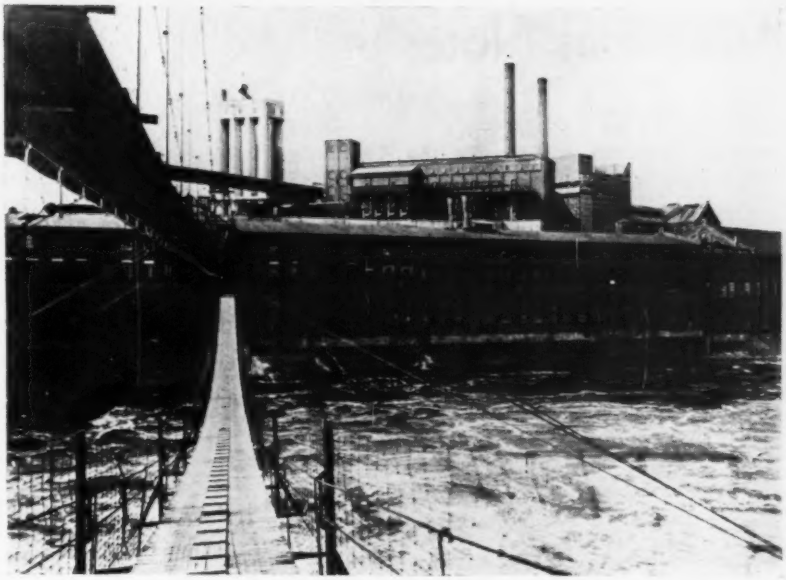
At present, however, it is a very "simple" problem that faces the Norwegian wood procesing industries. With the reduction of immediate reconstruction needs, more timber may be made available to these mills. The trees are there, the mills are there, and there are buyers for the product. Favorable logging conditions in 1948-49 can result in a near-normal timber fall and an encouraging boost in the output of Norwegian pulp and paper mills.

Robbins' Acquire Interest In Clarke Business

JAMESTOWN, N. Y.—T. James Clarke reports that Samuel B. Robbins and Douglass Robert Robbins have acquired a substantial interest in the T. James Clarke Box & Label Works, Inc., and that they will be actively associated with him in the management and operation of the company.

The corporation, organized by Mr. Clarke in 1916, make boxes and labels, primarily for the pharmaceutical trade.

Mr. Clarke will continue as president, Walter Sandberg will continue as plant manager and Henry Beckman as superintendent.



Sarpsborg Mill of Norway's Borregaard, Inc.

Persia Importing Newsprint At Cost to Users

WASHINGTON—Provision for small imports of newsprint for distribution at cost to users, has been made in a decree of the Iranian Council of Ministers (Persia) it was reported from Teheran on July 23. Total imports under the plan will be 500 tons, and will be obtained from whatever countries offering the most favorable prices and delivery, it was stated.

Diamond Alkali Plans Big Expansion Program

CLEVELAND—Diamond Alkali Co. has completed negotiations with Metropolitan Life Insurance Co. for a $10,000,000 three percent loan to mature July 1, 1968. First Boston Corp. acted as agent for Diamond in negotiating the loan.

"The loan," said John A. Sargent, Diamond's financial vice-president, "will permit the company to round out a $30,000,000 program of plant expansion and product development, which in addition to the construction of a chlorine-caustic soda plant at Houston, Tex., includes modernization and further diversification of operations at Painesville, Ohio.

The new Houston plant, which cost approximately $15,000,000, is already in operation and is expected to reach capacity by fall. Both the Cincinnati and Dallas silicate plants have been expanded and a new detergent plant has been put into operation at Dallas.

Facilities for increased production of bichromate are being expanded at Painesville and at the Kearny, N. J., plant of the Martin Dennis Co., a Diamond subsidiary.

Pennsalt's Rodenburgh Retires; N. Y., Paterson Offices Merged

PHILADELPHIA—Frederick G. Rodenburgh, New York district sales manager for the Pennsylvania Salt Mfg. Co., retired July 16 after nearly 50 years of service with the company.

The company, in announcing Mr. Rodenburgh's retirement, said that effective July 19, the New York sales office will be consolidated with the Paterson, N. J., sales office, at 152 Market street, Paterson, 1.

Charles A. McCloskey, district sales manager, will be in charge of the consolidated office which will handle Pennsalt sales in Eastern New York State, including the New York City metropolitan area, New England and northern New Jersey.

Sell Made V.P. Sales Of Detroit Company

DETROIT—Kenneth G. Sell has been elected vice-president in charge of sales of the Detroit Sulphite Pulp & Paper Co., President G. N. Carleton reported to *Paper Trade Journal* on July 21. Mr. Sell became associated with the company in 1930 and has been sales manager for the past 12 years.

Electric Storage Battery Ups Tynan and Warren

PHILADELPHIA — Thomas G. Tynan has succeeded Harry W. Beedle, retired, as manager of the Boston branch of the Electric Storage Battery Co., and Herbert H. Warren has been named assistant manager of the New York branch.

Australian Notes

PERTH, Wa. — The Commonwealth Statistician reports that the total imports of newsprint for the month of March, 1948, were 5,001 tons, an increase of 1,580 tons in February. All such imports came from Canada.

Other imports of papers during the month were: (figures in Australian hundredweights of 112 lb.)—Imitation art, 4,277 (Sweden 2,559; U.K. 1,453; Norway 222; U.S.A. 43); duplex, 103 (all from U.K.); other coated printing papers, 8,155 (U.S.A. 4,985; U.K. 2,196; Canada 400; Sweden 384; Belgium 99; Netherlands 91); glazed imitation parchment, 520 (Sweden 493; U.K. 22; Finland 5); lithographic, machine glazed or one side calendered, 5,671 (Sweden 2,587; Finland 984; U.K. 578; Netherlands 506; Austria 364; U.S.A. 267; Czechoslovakia 203; Norway 120; Canada 62); offset embossed, 618 (Sweden 484; Canada 134); poster printings, machine glazed, 2,134 (Sweden 760; Norway 543; U.K. 389; Austria 338; Finland 104); and other printing papers, 32,431 (Canada 11,703; U.S.A. 6,797; Sweden 5,856; U.K. 2,477; Norway 2,243; Finland 1,703; Czechoslovakia 1,487; Netherlands 107; Austria 58).

Total imports during March from the United States were 12,092 Australian hundredweights, valued at 58,243 pounds ($279,566 at par).

Mr. Skinner, the New Zealand Commissioner of State Forests, states that it is expected that a detailed report on the establishment of a pulping and paper-making plant in the Dominion, made by visiting American experts, will reach the Government in September next. In a statement on the position Mr. Skinner says: "In contrast to the world timber supply position, the forward pulp and paper position recently investigated overseas by A. R. Entrican, the Director of Forestry, was not so encouraging as far as exports markets were concerned. Unlike timber, pulp and paper carry no huge accumulated shortages, and what shortages do exist will probably be eliminated within three years."

Dealing with the fact that North America has such a potential wealth of logging and sawmill waste available, he added: "New Zealand must therefore be most cautious when contemplating expanding pulp-producing facilities for any considerable export during this current period of extremely high capital investment."

Mr. Skinner explains that it was in view of the need for an independent investigation of such a nationally important project that the Government had obtained the services of the Rust Engineering Company, of Pittsburgh, Pennsylvania. "The engineers and the pulping experts who are now visiting New Zealand have made exhaustive investigations into the physical, technical and engineering problems involved in the whole project. But this investigation has confirmed the State Forest Service's belief that, in spite of high capital charges, the local development of newsprint, printings and writing mills, complete with groundwood and sulphate pulp mills, is entirely economic."

G. Semmens, chief research chemist of Australian Paper Manufacturers, Melbourne, who recently returned from a 12-months investigation tour of the United States, Canada, Sweden, Norway, Holland, Germany and Great Britain, said: "Australian hardwoods will play an important part in satisfying the world demand for paper." He added that he believed that most of the problems that had previously retarded the industry in Australia could now be solved, and he said that he was particularly impressed by the great advances which have been made in cellulose research in Sweden.

Among the recent patients issued was one (No. 126,645—Australian Paper Manufacturers Ltd., New South Wales) for a paper product. Details are "a 'vanishing paper' bearing embroidery or like designs to be transferred to textile fabrics or the like, is formed of unsized paper impregnated with sulphuric acid through immersion and drying, so that after applying the design the paper may be disintegrated by the action of heat and pressure."

Australian Paper Manufacturers Ltd., reports that although the recent fire at the Botany mills destroyed about 1,125 tons of imported wood pulp, 6,000 tons of waste paper and 40,000 wool packs, valued at about 185,000 pounds ($888,000 at par), practically no loss of production was suffered, and only negligible damage to buildings and plant.

A permit has been officially issued for extensions and alterations costing

(Continued on page 16)

ACCL Colorado Springs Eleventh Annual Meeting

"Applied research is not well-suited to government operation and should best be left to independent laboratories," Senator Robert A. Taft stated in a letter read before the Eleventh Annual Convention of the American Council of Commercial Laboratories in session at Colorado Springs, Colo.

The ACCL which serves some 80,000 governmental, manufacturing, and distributing clients is composed of 39 leading independent laboratories in principal cities and is headed by Dr. Bernard L. Oser,

A. L. Brassell, president of the United States Testing Co., Hoboken, N. J., expressed the Council's attitude toward the government's invasion of the field of applied research, when he said, "We believe the government should confine itself to financing and promoting fundamental projects in research and leave the field of applied research, which affects particular industries, to tax-paying independent laboratories."

Dr. Bell, from the Lucius Pitkin Laboratories, Inc., told the meeting of new spectrographic techniques for tracing small amounts of metals even to the extent of the copper in the cornea of the human eye.

Developments in the control of "smog," that peculiar combination of smoke and fog, were also reported.

The Smith-Emery Laboratories of Los Angeles, reported progress in studies of the possibility of constructing more earthquake-proof buildings.

The South Florida Test Service told the convention that experiments in Florida promised to reveal much regarding the effect of sunlight, sea water and humidity on constantly exposed materials.

The United States Testing Company, Inc., has spear-headed the Council's contrast with the European Recovery Program in attempts to clarify standards and meet foreign specifications of production.

Dr. Oser, council president, telling of his organization's activities, cited the separation of the most effective elements of penicillins and streptomycins and the classification, after study, of the most favorable conditions under which these drugs can be raised.

A development was the report of a device which would, in only a few minutes, check the wiring of a new building. The device can be used by local building inspectors to throw overloaded currents and high voltages on the system of the structure and determine any weak spots.

Automobile anti-freeze solutions also came in for discussion. The Council went on record as recommending close check and test on all new and untried solutions. Technicians pointed out that chlorides tend to produce destructive electrolytic action while oils commonly used will injure rubber hoses and gaskets.

Standards of testing, quality controls and a rigid code of ethics were vital points for discussion of the convention.

Dowd Erecting Addition

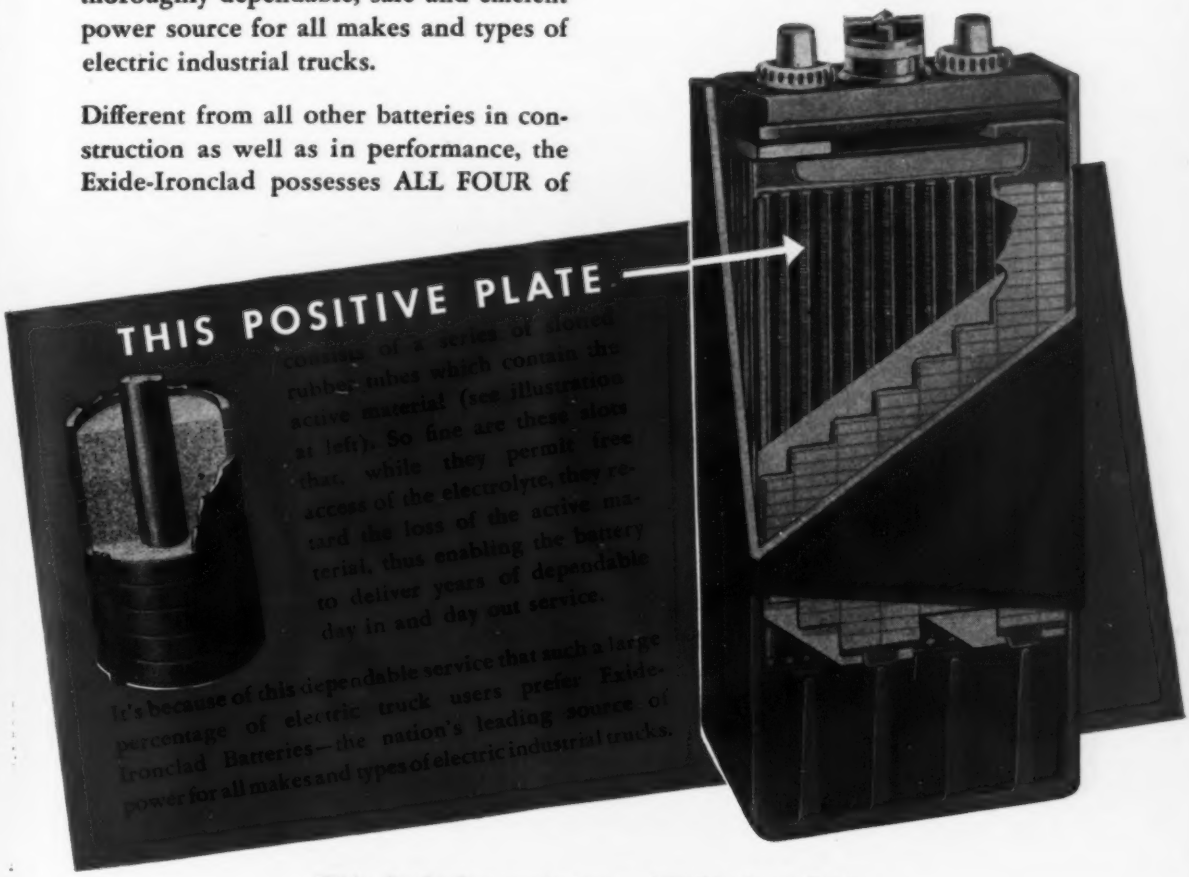
CAMBRIDGE, Mass.—H. J. Dowd Co., coarse paper merchant firm, is erecting an addition to its premises at 217 Thorndike.

USERS EXPRESS PREFERENCE FOR Exide IRONCLAD BATTERIES

IN a recent national survey made by a leading industrial publication, 81.1% of electric industrial truck users expressed a preference for Exide-Ironclad Batteries.

Such overwhelming preference for the Exide-Ironclad Battery is based upon user experience. This unique battery has, during the past 35 years, proved itself to be a thoroughly dependable, safe and efficient power source for all makes and types of electric industrial trucks.

Different from all other batteries in construction as well as in performance, the Exide-Ironclad possesses ALL FOUR of the essential characteristics demanded of a battery for electric industrial truck service—(1) high power ability, (2) high efficiency, (3) great ruggedness, and (4) long life. These characteristics are due to the special construction of the Exide-Ironclad Battery, especially its rugged, tubular positive plate.



Write for further particulars and FREE copy of Exide-Ironclad Topics, which covers latest developments in material handling and shows actual case histories.

1888...Dependable Batteries for 60 Years...1948

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

How Labor Relations Service Helps Association Members

WASHINGTON—Milton A. Smith, writing in the July issue of *Nation's Business* under the title of "They Pay off in Better Bargaining," tells how both management and employes profited by utilization of the newly organized labor relations service which the Southern Pine Ass'n., provides for its members.

Mr. Smith said in part: "Lumber mills in the Carolinas had been a particular target of the CIO's organizing drive 'Operation Dixie' for some months. Carl Parks, a local mill owner was, therefore, not surprised when a CIO representative walked into his office with a demand for union recognition and a contract. He was prepared for the interview.

"Parks' 'quickie' education in the intricacies of labor relations is typical of the effective work of the newly organized labor relations service of the Southern Pine Ass'n. His ability to negotiate a contract satisfactory to both sides was due in large measure to information and advice provided by the association.

"Sparked by H. C. Berckes, secretary-manager of S.P.A. for more than 25 years, this program was set up particularly to help the many employers in the industry who were somewhat unfamiliar with collective bargaining procedures.

"The S.P.A. program typifies a trend in trade association activities which is paying dividends in harmonious labor relations. The growth of such programs has been of special significance in 'small business' industries.

"Management has often arrived at the bargaining table poorly equipped in contrast with union representaties. Realization of this has been the force behind the establishment of many trade association programs in labor relations. Faced with skilled, experienced union negotiators armed with reams of statistics, employers naturally turn to their trade associations for the advice and information needed to equalize the bargaining process.

"Some industries still hesitate to set up labor relations programs in their trade associations, but their number is dwindling. A few weeks ago a speaker addressing a large gathering of association executives in Washington, D.C., on the subject of labor relations, said, 'If you are not in this field now, you soon will be.'

"Where reluctance is found, the reason usually is fear that association activities in labor relations may be an opening wedge for industry-wide bargaining.

"Experience shows, however, that helping the employer to help himself lessens the likelihood that he will get discouraged and want to turn the job of bargaining over to an employer organization.

"Recently a member of the Folding Paper Box Ass'n., of America was studying a key demand of the union with which he was negotiating. The union wanted a change in grievance procedure, and had submitted a proposed clause for the new contract.

"The suggested procedure looked like something new; it might work fine, and then again it might lead to endless controversy; it was hard to visualize just how it would operate in practice.

"'The last time I negotiated a contract,' the manufacturer said, 'I had only rumor or hearsay to guide me when I needed to know what procedures other companies had found practicable. This time I just looked over the contract clauses used by other companies which the association had sent me.

"'No one of these clauses was like that proposed by the union. When I told their representative this, he quickly agreed to a procedure most other companies had adopted.'

"Giving members the facts they need to negotiate intelligently aids the job of bargaining at the plant level, as this instance points out. In fact, A. E. Murphy, executive director of the Folding Paper Box Ass'n., emphasizes that this association does not enter into any negotiations with unions on behalf of its members.

"'We feel that the interests of labor and management can best be served by contracts written and signed by men familiar with the individual plant situation,' said Murphy. 'The union representatives have access to the contracts and wage schedules of numerous companies; employers need the same information if there is to be true collective bargaining'."

Paraffined Carton Research Program Expanded

CHICAGO—On the anniversary of its fourth birthday the Parafined Carton Research Council of Chicago announced its accomplishments and the program for the coming year. An advertising program is designed to reach 70,000,000 consumers through general circulation magazines, according to Harvey H. Robbins, executive secretary of the Council.

The Council's educational program for the coming year is based upon butter and packaging research conducted during the last two years at the Universities of Wisconsin and Minnesota.

Currently the Council is researching ice cream cartons and ice cream merchandise. Educational promotion on the subject of ice cream cartons will be conducted during the summer.

A picture and story feature to 1,000 metropolitan daily newspapers via "Foto Features" syndicate covers such subjects as "Packaged Ice Creams Helps Keep the Kids at Home," and "Packaged Ice Creams Makes Sodas a Cinch." "How About a Frigid Nicety," a radio script, is being released to an exclusive list of stations.

Australian Notes

(Continued from page 14)

about 150,000 pounds ($720,000) to convert portion of the old gun-cotton works at Ballarat (Victoria) into a paper-coating mill for Thomas Owen & Co., of Cardiff (Wales).

It is announced that Paper Makers Pty. Ltd., a subsidiary of Associated Pulp & Paper Mills Ltd., Burnie, Tasmania, intends to install a plant capable of providing 10,000 tons of hardboard a year. Major plant units are already on order.

Edwards Dunlop Ltd., paper merchant firm, reports a net profit for the year ended April 30, 1948, of 48,100 pounds ($230,880 at par). Directors state that the position of the Australian paper trade would have been serious had it not been for good supplies obtained from Scandanavia and improved quantities from Britain.

Two Hundred Attend Service Employes Dinner

UTICA, N. Y. — More than 200 attended the installation-dinner July 18 in the Service Employes Club for officers of Sauquoit Valley Local 363, International Brotherhood of Papermakers Union, AFL.

Frank P. Barry, Albany, regional director, installed the new officers. Speakers included Paul Phillips, Albany, president of the international brotherhood; Sidney Lasher, general manager of Sitroux Paper Co.; Henry Trolin, vice-president of Sitroux; Stanley Waxman, personnel director of Sitroux; Michael J. Walsh, regional AFL organizer, and Rocco F. DePerno, president of the Chauffeur's Union and the Utica Trades and Labor Assembly. Anthony Laria was dinner chairman and E. Ralph Brewster was toastmaster.

Officers installed were: President, Laria; vice-president, Peter Mazza; financial secretary, Anthony Migliaccio; treasurer, Joseph Mazza; recording secretary, Frank Mazza; trustees, Joseph Roy, Walter Duda and Daniel Jacksima.

Glas-Kraft, Inc., New Firm In Hyde Park, Mass.

HYDE PARK, Mass.—Ellsworth A. Rounseville reports to *Paper Trade Journal* that "We (Glas-Kraft, Inc.) are a new company operating at 101 Business street. The firm manufactures laminated papers reinforced with Fiberglas.

Alhydro FLOC PRODUCER

PATENTS PENDING

FOR INDUSTRIAL OR MUNICIPAL WATER TREATMENT PLANTS -- AND SWIMMING POOL INSTALLATIONS

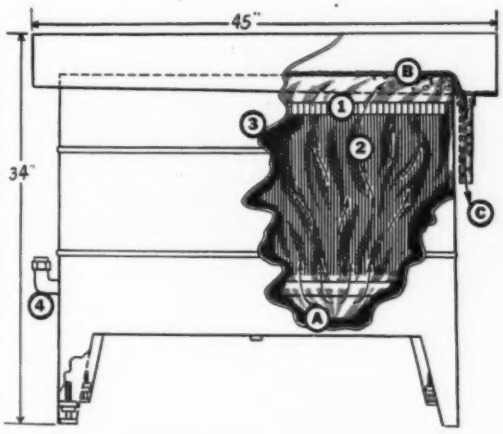
"...produces efficient floc in any water normally used..."

"and there's no need to chemically correct the water before or after treatment..."

Extensive tests conducted under a wide variety of representative water conditions have proved that the Alhydro Floc Producer will produce an efficient floc at any pH from 4 to 12 . . . and at temperatures normally found in industrial or potable waters . . . even extremely cold or warm waters.

Concentrated aluminum hydroxide floc is produced in the Alhydro unit by low voltage electrolytic decomposition of easily replaceable aluminum plates. This method of producing floc by electrolysis permits control of the floc concentration and results in an unusually stable floc that will re-form immediately if broken up. Since 69 lbs. of aluminum Alhydro plates will treat as much water as nearly ¾ ton of coagulants, the problem of chemical storage is minimized.

One Alhydro Floc Producer will treat 300,000 gallons of water per day . . . but the units can be installed singly or in multiples in existing or new water treatment plants.



1. **Bus Bar on each side of tank.**
2. **Alternate Stainless Steel and Aluminum Plates.**
3. **Composition Rubber Lined Stainless Steel Tank.**
4. **Water Feed Line easily removed for inspection.**

A. Water enters tank through slots in feed pipe.

B. Concentrated floc rises to top and leaves through discharge trough.

C. Discharge pipe feeds floc to raw water.

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ALHYDRO, INC. (DEPARTMENT 8C) **516 N. CHARLES ST., BALTIMORE 1, MD.**

J. J. HERB, PAPER VETERAN, HONORED

J. J. Herb (left) founder of the Westminster Paper Co., New Westminster, B. C., and of the Pacific Coast Paper Mills, Bellingham, Wash., is presented with a silver tray engraved with pictures of both mills by J. G. Robson, director of Westminster Paper Co. Seated is F. J. Herb, president of the Pacific Coast Paper Mills, Bellingham, and standing is F. F. Foote, secretary of the Westminster Paper Co. . . . Occasion for the presentation was a recent dinner tendered to Mr. Herb by directors and key employes of both companies. . . . Mr. Herb, now 75, began his career in the paper industry 60 years ago.

ICC Grants Petition

NEW YORK — Walter H. Martens of George W. Millar & Co., Inc., chairman of the Transportation Committee of the New York Ass'n. of Dealers in Paper Mills' Supplies, Inc., on July 29 reported that a petition filed by the committee praying that an exception be made whereby freight rates on scrap paper, rags, cotton linters and regins, cottonseed hull fibres or shavings, cotton waste other than manufactured packing or wiping waste, and wool waste other than manufactured packing or wiping waste would not be increased more than a maximum of 11 cents per 100 pounds was incorporated in the Interstate Commerce Commission's decision establishing two recently allowed temporary increases in freight rates in eastern, southern and western classification territories.

Charles J. Browne, traffic counselor, handled the case for the Association before the ICC.

A maximum increase of 14 cents per 100 pounds is stipulated for wood pulp, cotton linter pulp, cottonseed hull shavings pulp, and wood excelsior.

Calgary Mill Site Considered

EDMONTON, Alta.—A pulp and paper mill will be established in Alberta, barring the outbreak of war, R. O. Sweezey, Montreal financier representing eastern interests in the project, stated here. Estimated cost is $20,000,000 in place of the original $14,000,000, the increase being due to plans for production of dissolving pulp from Alberta jackpine.

Mr. Sweezey said a Calgary site is under consideration.

$9,000,000 Red Dear Mill

RED DEER, Alta.—A $9,000,000 pulp and paper mill is in prospect, Fred Dowler, of Dowler & Stevenson, real estate agents, states, following earlier reports that several concerns had been negotiating with the Alberta Government for Crown timber lands.

The mill is to be constructed by Alberta Pulp Mills Ltd., on 107 acres of land purchased from the city of Red Deer for $107,000. R. N. Simpson, vice-president of Cellulose Engineers Inc., Seattle, Wash., is in charge.

Construction of the plant, with an electrical capacity of 7,500 K.V.A., is to be started in the spring of 1949 and production is expected to start by October, 1950.

The site selected for the plant, which is to produce finished paper as well as newsprint, was formerly owned by the E. B. Eddy Co., which held it for 20 years before turning it back to the city, after plans to construct a paper mill were abandoned. The plant will be west of town, adjoining the CPR trackage, close to the Red Deer River.

Earlier it had been announced from Edmonton that the new company had asked the province for a grant of 300,000 acres of Crown lands, in the region of Rocky Mountain House, about 62 miles west of Red Deer.

Melbey Hough, Rimbey timberman, is president of the new company. Eastern interests are financing the project. (ED. NOTE: Red Deer is about midway between Edmonton and Calgary.)

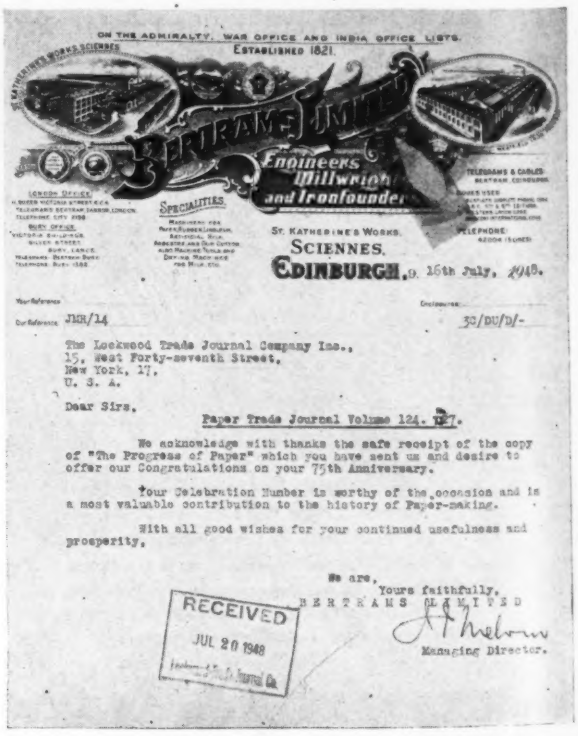
Nanaimo Excavation Begun

NANAIMO, B. C.—Excavation for the $12,000,000 pulp plant of the H. R. MacMillan Export Co., Ltd., eight miles from this city, has started. The plant is scheduled to be finished by 1950. Contract for the construction of the 200-ton sulphate pulp mill was awarded to the B. C. Bridge & Dredging Co. Ltd. The mill will use waste wood products from the company's mills both on Vancouver Island and the Fraser River.

Less Work for Mother

NEW YORK — Both paper and cellophane are used lavishly by families owning home freezers, an article in the August 17 issue of *Look* entitled "Less Work for Mother" demonstrates. The issue hit the newsstands August 3. Paper plates, cups and cartons are recommended in the article as aids to streamlining housekeeping.

J. I. Melvin, managing director of Bertrams, Ltd., old-established firm of engineers, millwrights and ironfounders, of Edinburgh, Scotland, termed "The Progress of Paper," recently published by the Lockwood Trade Journal Co., in commemoration of the 75th anniversary of the founding of "Paper Trade Journal" a most valuable contribution to the history of papermaking. A facsimile of Mr. Melvin's letter appears herewith.



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SCIENNES,

EDINBURGH, 16th July, 1948.

Your Reference

Our Reference JMR/14

Enclosures

3C/DU/D/-

The Lockwood Trade Journal Company Inc.,
15, West Forty-seventh Street,
New York, 17,
U. S. A.

Dear Sirs,

Paper Trade Journal Volume 124. No. 27.

We acknowledge with thanks the safe receipt of the copy of "The Progress of Paper" which you have sent us and desire to offer our Congratulations on your 75th Anniversary.

Your Celebration Number is worthy of the occasion and is a most valuable contribution to the history of Paper-making.

With all good wishes for your continued usefulness and prosperity,

We are,

Yours faithfully,

BERTRAMS LIMITED

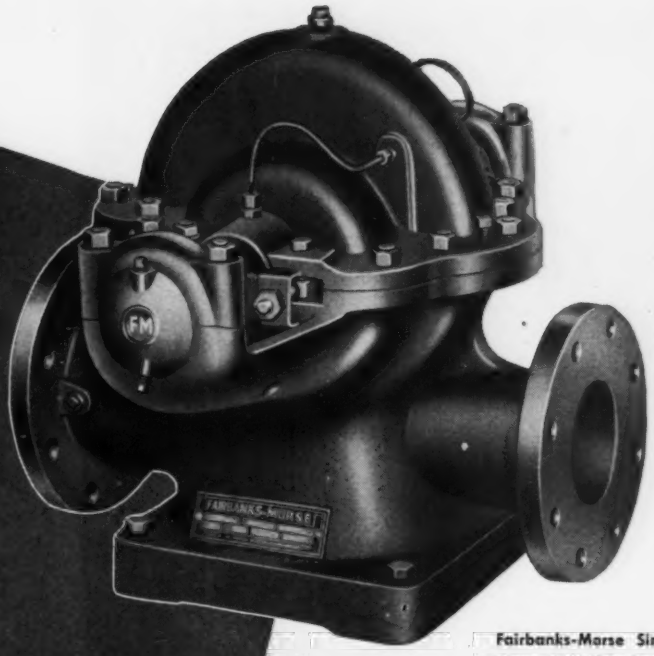
J. I. Melvin

Managing Director.

RECEIVED

JUL 20 1948

Why use two stages when ONE will do?



Fairbanks-Morse Single-Stage, Split Case Centrifugal Pump—for dependable, high-head service.

When your job demands a multi-stage pump, the Fairbanks-Morse pump expert will recommend the right one from among the broad line built by *his* company . . .

But—frequently he can help you save the cost of a more expensive unit by recommending one of these single-stage, split-case pumps . . . whose performance, where heads reach toward 300 feet and capacities range to 72,000 g.p.h., is often equal to that of more costly multi-stage pumps.

Without prejudice, he can find for you the pump that suits your needs best; for in the Fairbanks-Morse line, he has all types, all sizes.

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A FEW OF THE COMPLETE LINE OF FAIRBANKS-MORSE PUMPS

Trash Pumps

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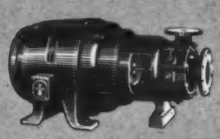

Builtogether

George P. Haberstein

—recently named eastern sales manager of the St. Regis Sales Corp., Multiwall Bag Division . . . Mr. Haberstein became associated with St. Regis late in 1947. Previously he was for eight years with the Union Bag & Paper Corp., and before that with the Scott Paper Co.

Wisconsin Sound-Movie

MILWAUKEE — A 20-minute motion picture, in full color and sound, will be shown free to visitors at the Wisconsin Centennial Fair and Exposition, August 7 to 29, by the Wisconsin Pulp, Paper and Paper Products Industry, it was announced on July 30 by A. C. Gilbert of the Gilbert Paper Co., Menasha, general chairman of the industry's Centennial Exposition plans. The film is sponsored by 69 Wisconsin manufacturing firms.

Assisting Mr. Gilbert in producing the film and planning its showing were: M. J. Schulenburg of the Kimberly-Clark Corp.; Owen E. Lyons of the Marathon Corp.; Alan Pradt of the Rhinelander Paper Co.; Tad Meyer of the Nekoosa-Edwards Paper Co.; Norman Zanzig of the Thilmany Pulp & Paper Co.; P. R. Rundquist of the Marathon Corp.; A. C. Haselow of the Gilbert Paper Co., and Wallace Brown of Kimberly-Clark.

Southern Tree Crop

More than 29 million dollars were expended in the South by the Southern Kraft Division, International Paper Co., during 1947 for a record total of 2,874,471 cords of pulpwood delivered to the company's eight Southern mills in 1947, a special illustrated report on the company's Southern woodlands operations issued July 28 states; an increase of 146,651 cords over 1946.

Announcement of the report, entitled "The Great Southern Tree Crop," was made today in Mobile, Ala., by Major J. H. Friend, Vice President of the company and General Manager of the Southern Kraft Division, who explained that this was the second report of its kind published by the company in the South in an effort to encourage sound woodlands practices. The first published account of the company's Southern woodlands activities was issued last year under the title, "Report to the People of the South."

British Newsprint Situation

"Newsprint 1939-1949, The Crisis of the British Press," issued under a July 21 dateline by the Newsprint Supply Co., Ltd., London, England, contains a reprint of the evidence submitted in October, 1947, and March, 1948, to the Royal Commission on the Press with an additional section reviewing the outlook for British newspapers in 1949. Preface to the 44-page booklet was written by Lord Rothermere, chairman of the company.

Box Men Golf

CHICAGO—Members of the Set-Up Paper Box Ass'n., will be the guests of the Chicago Paper Box Suppliers at a golf tournament at River Forest Golf Club, August 6. The tournament will be followed in the evening by a floor show, Charles Podolsky, chairman of arrangements, states Fred L. Liphart is secretary-treasurer of the Suppliers Ass'n. and George Mueller of the Best Paper Box Co. is president of the Set-Up Paper Box Ass'n.

Fire Protection Needed

(Continued from page 11)

unprotected land and $24,361,263 on protected. However, about half the damage on protected land occurred as a result of the October fires in Maine.

Forest fires caused by incendiarists on protected land increased in 1947 as compared with 1946, but those caused by smokers dropped somewhat, according to the report, which does not cite causes for fire on unprotected land.

The report said that 1947 forest fires did damage estimated at $15,422,267 to timber stands as compared to damage of $5,311,237 to timber in 1946. These estimates, however, covered only damage to timber on protected land, and were said admittedly, to be low. Also, said the report, it should be remembered that the estimates of forest fire damage reported do not take into account "the vast intangible and indirect losses resulting from forest fires, such as those caused by decay of fire damaged timber, replacement of desirable species by less valuable ones, soil deterioration and erosion, uncertain stream flow, destruction of game, interruption of tourist use and travel."

Reporting separately on Alaska, the statistics for 1947 show 86 fires which burned over 1,419,586 acres on protected lands with no record of fires on land still without protection in the territory.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1948		Corresponding Weeks—1947	
June 19	95.0	June 21	106.1
June 26	99.8	June 28	103.7
July 3	91.3	July 5	62.7
July 10	62.3	July 12	93.5
July 17	87.1	July 19	102.8
July 24	*105.2*	July 26	106.1

COMPARATIVE MONTHLY SUMMARIES

1947						1948	
Jan.	102.1	May	106.2	Oct.	109.5		
Feb.	105.9	June	106.0	Nov.	109.3	Jan.	‡100.3
Mar.	106.1	July	93.5	Dec.	101.5	Feb.	‡99.8
Apr.	105.1	Aug.	104.2			Mar.	‡100.8
		Sept.	102.0	Year Avg.	104.3	Apr.	‡100.8
						May	‡100.4
						June	*94.5*

‡ Final Production

COMPARATIVE YEARLY SUMMARIES

	1941	1942	1943	1944	1945	1946	1947	1948
Year to Date	93.6	95.2	87.8	87.4	87.9	99.3	103.6	97.9
Year Average	97.4	90.4	87.8	88.1	89.4	101.1	104.3	

NOTE: As of January 10 capacity base increased by 13.3%.

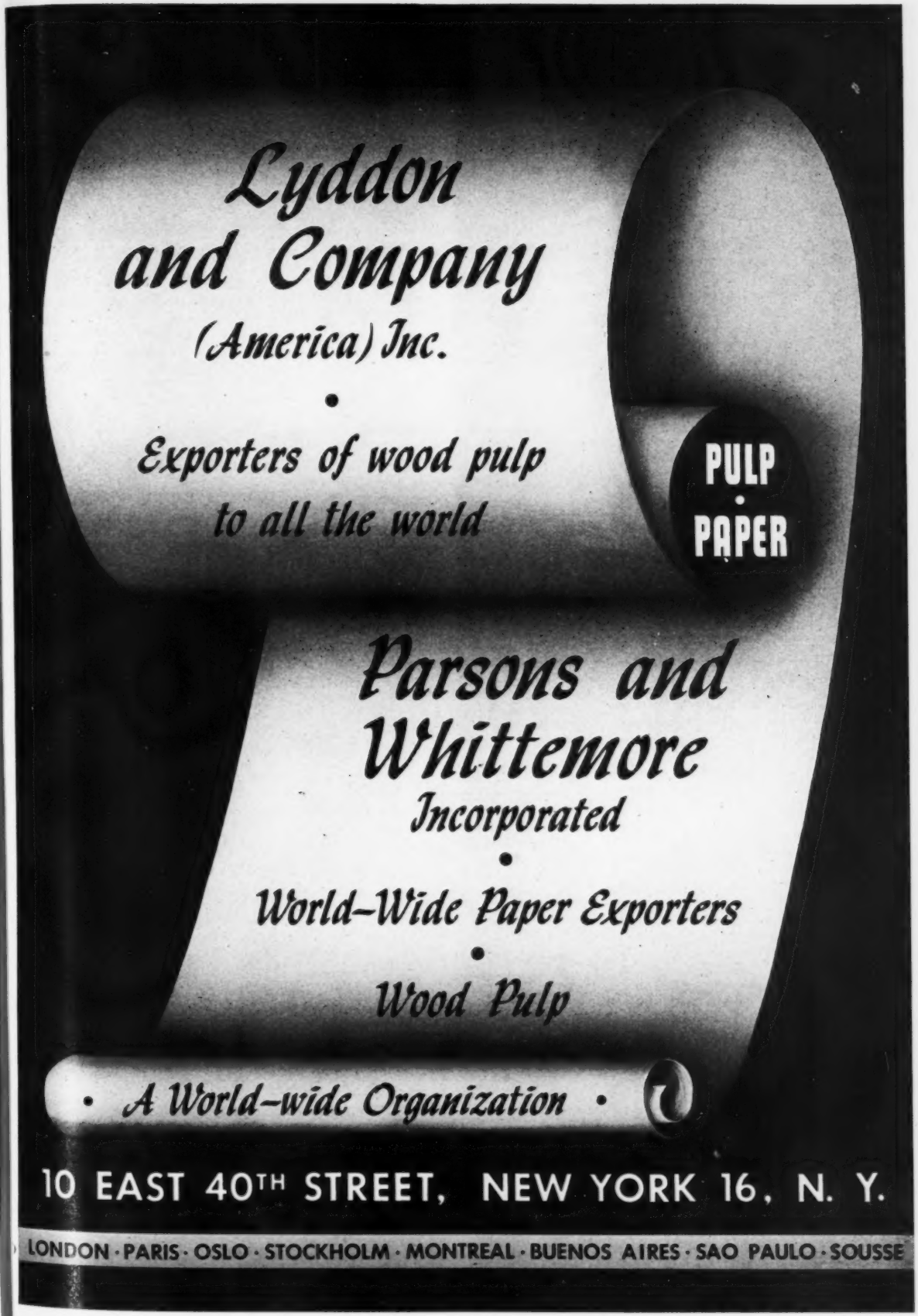
PAPERBOARD OPERATING RATIOS†

Current Weeks—1948		Corresponding Weeks—1947	
June 19	97	June 21	102
June 26	97	June 28	102
July 3	89	July 5	78
July 10	56	July 12	76
July 17	84	July 19	97
July 24	*91*	July 26	99

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1947	99	103	101	100	101	101	90	99	96	101	99	89	98
1948	99	100	102	102	100	*94*							

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.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Prepackaging Challenges Bulk Produce Sales

CHICAGO — The popularity of prepackaged produce and fruits is great with both consumers and dealers according to a survey being made by the Research Committee of the Folding Paper Box Ass'n. of America. The test is being made in a mid-western city of 20,000 persons. Three forms of packaging are being tested against sales of produce in bulk The following packages were used: (1) a transparent bag made of No. 450 MSAT cellophane; (2) an overwrapped tray; (3) a 24-point bleached manila carton constructed with transparent cellophane windows.

Of the 21 fruits and vegetables used in the study greatest popularity was found in the use of items which bruise easily. Lowest preference was noted when used for lettuce and celery. Peaches were the most popular item sold; 300 pounds as against 25 pounds in bulk. Seedless grapes in windowed boxes sold 240 pounds as compared with a bulk sale of 32 pounds. Prepacked green beans enjoyed a five-to-one sale over bulk. In every instance the same quality was used in each and prepacked produce sold at a range of two to five cents above bulk prices.

Research is being continued with reports scheduled for the first part of 1949, according to A. E. Murphy, executive director of the Association.

Austrian Paper Production Shrinks In Three Zones

WASHINGTON—Austrian paper production has fallen into two zones, with the U. S. and British areas producing most general types, and the Soviet zone turning out the bulk of roofing paper, during the 1947 production period, according to recently reported figures.

Roofing paper production for 1947 amounted to 444,000 square meters per month during 1947, a sharp drop from the 713,000 square meters reported monthly in 1946. However, the current monthly capacity is reported at 2,160,000 square meters.

The monthly average of other paper production in 1947 included newsprint, 3,156 tons; book and writing paper, 3,439 tons; wrapping paper, 2,967 tons; and special paper, 327 tons. The current monthly average of the paper industry was reported at 22,200 tons. In March, 1948, the latest monthly report, paper production, except roofing paper, amounted to 15,954 metric tons.

ACL Forestry Program Launched in Florida

WILMINGTON, N.C. — The Atlantic Land & Improvement Co., a subsidiary of the Atlantic Coast Line Railroad Co., announced on July 28 introduction of a long-range forestry and land development program on its 235,000 acre holdings in Hendry, Collier, Lee and Polk Counties, Fla. Work is being carried on under the supervision of J. R. Spratt, manager, forest and land development for the company, with offices at LaBelle, Fla., while the complete program is under the direction of Paul W. Wright, Coast Line industrial forester, Wilmington, N. C.

Tree Planting Blamed For N. Z. Erosion

WELLINGTON, N. Z.—New Zealand, after little more than 100 years of white settlement, has become seriously affected by erosion. According to Dr. L. I. Grange, head of the Government's Soil Bureau, more than half the country is affected, and in the high country of the South Island the total is up to 80 per cent.

Recent scientific discussions put the blame on the clearing of the native water-retaining bush and the planting of vast forests of foreign pine, which do not hold water. From these the Government is now planning to mill and pulp soft woods for export.

Clarence F. Skinner, Commissioner of State Forests, stated that in the last 12 months 426,000,000 board feet of timber had been cut. Altogether New Zealand has about 600,000 acres planted with foreign trees and a further 106,000 acres planned.

Sweden Exporting to Poland And Netherlands

WASHINGTON—Over 20,000 tons of wood pulp, paper and wallboard are to be exported from Sweden to the Netherlands this year under the 1948 trade agreement it was reported here on July 23.

Exports from Sweden call for 10,000 tons of mechanical wood pulp, 2,500 tons of kraft paper and 8,000 tons of wallboard.

Under another exchange arrangement (a commodity-exchange agreement with Poland) Sweden will export to Poland, among other products, synthetic resins and plastic materials, for which Poland will supply Sweden with 500 tons of caustic soda, 4,000 tons of calcined soda, and other commodities.

Letters

Dear Sir:

I express my satisfaction for the article by R. N. Cunningham on "Ownership and Availability of Lake States Pulpwood" in the July 8 issue of the "Paper Trade Journal."

I note that the feature, "Industrial Development" is to be continued. The kind of information which it is proposed to set forth in this section, if kept up to the standard set by the first article, will be of the utmost value in enlightening workers and the general public concerning the essential facts of the industry.

GEORGE W. BROOKS
Director, Dept. of Research & Education
International Brotherhood of Pulp, Sulphite and Paper Mill Workers
Washington 6, D. C.

Containers Tonawanda Plant Ready Late This Fall

BUFFALO, N.Y.—Paul J. Kreischer has been appointed head of the $1,500,000 Tonawanda plant of the Container Company, a subsidiary of the Continental Can Co. Inc., now nearing completion. "Construction should be completed around mid-October," Mr. Kreischer said. "About 30 days later we should be about ready to go into operation. David Roggenkemper will be in charge of production control.

"Ironing Out the Kinks" At Port Wentworth Mill

SAVANNAH, Ga. — Roland Wilber, vice-president of the Southern Paperboard Corp., speaking at a recent meeting of the Savannah Rotary Club, said that since June 2, when the first paperboard came over the machine at the firm's new Port Wentworth mill, "we have been more or less pre-occupied in getting the bugs out of the machinery and ironing out the kinks so that the mill can operate efficiently."

Wilder Bros., Philadelphia Purchase New Building

PHILADELPHIA—Wilder Bros., paper merchant firm, has bought the four, two and one-story brick and steel building at the southwest corner of Sixteenth street and Indiana avenue. The new owner will occupy the major portion of the building.

Pioneer Wrapper Co. In New Location

LOS ANGELES—Jack Leiser, manager of the Pioneer Wrapper Co., manufacturer and converter of gift wrappings, reports to *Paper Trade Journal* that the firm removed on July 15 from 820 Traction avenue to larger quarters at 2041 East Twenty-Fifth street.

Envelope Makers Given Wage Increase

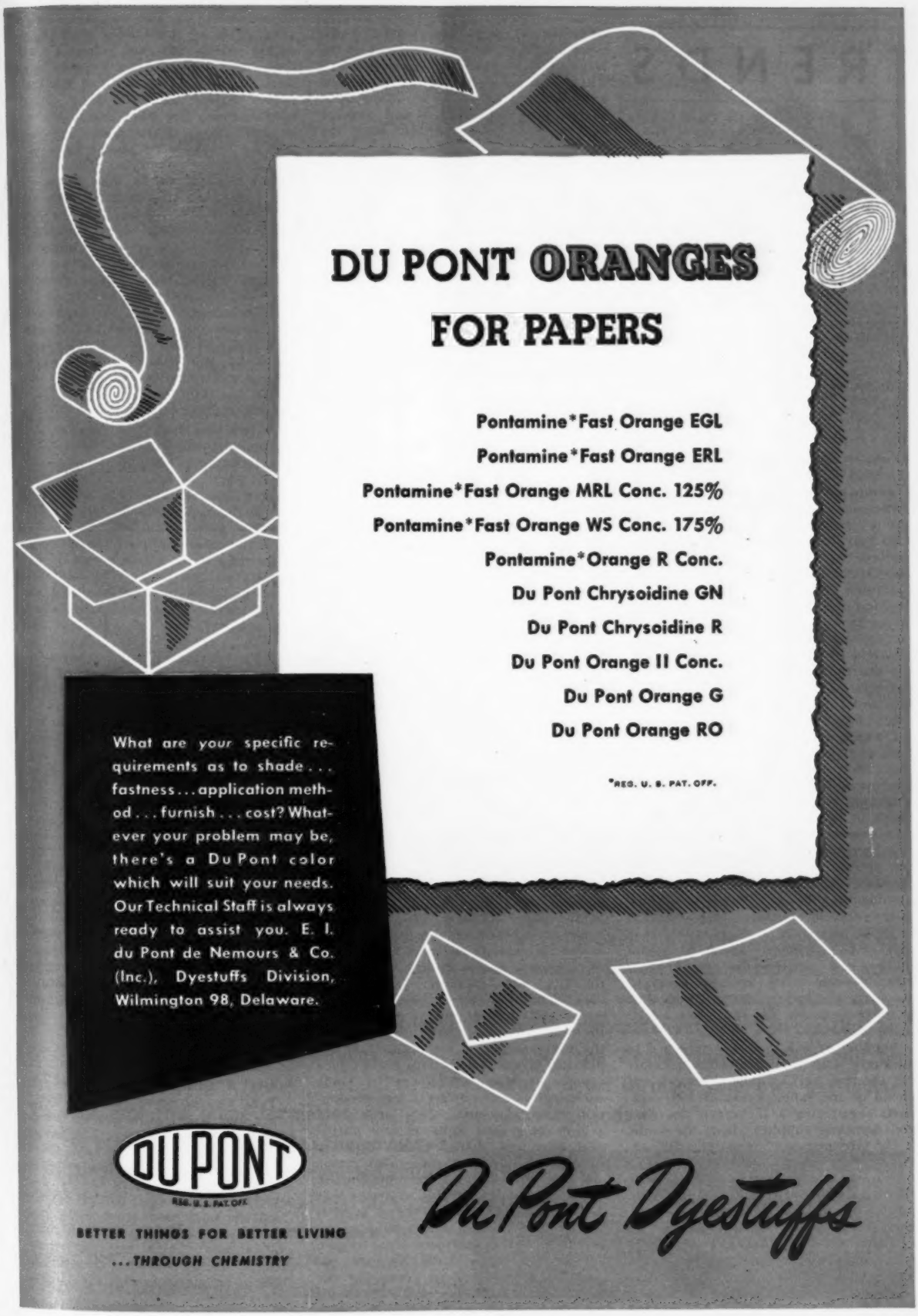
SPRINGFIELD, Mass.—United States Envelope Co., announced July 23 an eight percent wage increase, effective July 26, for all employes. The increase applies to factory and office workers here and in other divisions of the company.

Warrick To Retire From Paper Firm

TOLEDO, Ohio — Lorin C. Warrick assistant treasurer of the Ottawa River Paper Co., will retire on July 31 after 25 years with the company. He will be retained as consultant during the company's present expansion program.

Eastman Adding Four Brammer Controls

NEW YORK — Paper and Industrial Appliances, Inc., reports that, after using one Brammer Recording Consistency Control for a year, the Eastman Kodak Co. will install four more in its paper mill at Rochester.


DU PONT ORANGES
FOR PAPERS
Pontamine*Fast Orange EGL
Pontamine*Fast Orange ERL
Pontamine*Fast Orange MRL Conc. 125%
Pontamine*Fast Orange WS Conc. 175%
Pontamine*Orange R Conc.
Du Pont Chrysoidine GN
Du Pont Chrysoidine R
Du Pont Orange II Conc.
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*REG. U. S. PAT. OFF.
What are your specific requirements as to shade . . . fastness . . . application method . . . furnish . . . cost? Whatever your problem may be, there's a Du Pont color which will suit your needs. Our Technical Staff is always ready to assist you. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.
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BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY
Du Pont Dyestuffs

TRENDS

Office of the PAPER TRADE JOURNAL
Wednesday, Aug. 4, 1948

"The leveling off in over-all paper and board demand since the turn of the year, with supplies of most grades currently meeting market needs, marks the climactic end of the day of the day-to-day struggle to solve production problems facing the industry from the early stages of the war," writes W. L. Neubrech in the U. S. Dept. of Commerce July report on the Pulp and Paper Industry. And while current problems have not vanished with the change, the industry as a whole has reached a period when long range problems can and must receive more thought.

Pulpwood

First of these problems suggested is pulpwood supply, since "the majority of companies find it economically advantageous to procure a substantial part of their pulpwood requirements from privately owned woodlands. Regardless of the excellent forestry practices applied by most companies on their own timber holdings and the application of equivalent practices on purchases from privately held lands, there continues the problem of sustained timber yield from such privately held forests drawn upon by the several forest products industries in addition to the pulp and paper mills. Great praise belongs to several of the pulpwood, pulp tnd paper associations, as well as to some of the other forest product industries and to a number of individual companies for their splendid forestry programs. However, much more remains to be done to bring into proper management all timber lands and to educate forest product manufacturers and private timber land-owners of the necessity for such a program," the Department points out. "While this long-range problem of timber supply cannot be fully solved in a year, every year that passes without adequate action renders the problem that much more difficult with more acreage entering poor productivity of either pulpwood or stumpage suitable for the other wood-using industries."

Supplies of pulpwood are reported as adequate with total pulpwood receipts for the first half of 1948 three percent ahead of the same period of 1947, imports registering a 27 percent increase and domestic supplies about the same.

"A circumstance of potentially adverse effect on the pulpwood supplies of eastern Canada and border states is the recent forest fire of northern Ontario and that of northern Quebec," writes the Dept. of Commerce. "In Ontario where the fire was considered to be the worst in the history of the Province, more than 100,000 acres were reported by trade sources as having been burned over, and a large number of pulpwood camps were forced to suspend operations. In Quebec, one of the large pulp and paper companies had a considerable area of its limits burned over and two camps destroyed, while several other companies had damage of a lesser degree. In addition to the destruction of timber and other property, there was a loss of cutting activities on the part of thousands of woodworkers due to their preoccupation with fire control. A salvage operation engaged in by the companies and the provincial authorities is the prompt removal of the unburned trunks of all those trees whose tops had been irretrievably damaged by the blaze."

Enlightened self-interest in the field of pulpwood production comes in the report of a railroad operating in the important pulp and production area of the southeastern U.S. — a road which claims the distinction of being first to employ a full-time industrial forester. Among the activities of this official, the pulp and paper industry are rendered significant service. "The railroad reports a comprehensive effort to disseminate among farmers, land-owners, foresters and all others identified with forest activities the most up-to-date information on forest conservation and advantageous cutting practices. These educational activities utilize the media of participating industries, of regional associations devoted to economic consumption of timber, and of that useful organization of older boys, the Future Farmers of America. The railroad also indicates that it has converted cars to pulpwood use and has designed a car especially for this purpose. An available fleet of 1,400 cars for hauling pulpwood, a record of having delivered more than 3.5 million tons in 1947 to the mills served by its lines, gives evidence of the road's special interest in the pulp and paper industry."

Market Pulp

Confronting the non-integrated paper mills is the long-range prospect of market-pulp supply, for if that section of the paper industry is to remain in competitive existence new supplies of reasonably and fairly-priced pulp must be foreseen before long. Even then, the Dept. of Commerce expects that some of the less efficient non-integrated paper mills will go out of existence in the next few years. "Already with only the early stages of competition in paper and products apparent, Field Office reports indicate shutdowns of some submarginal mills brought into production during the war."

Non-integrated mills in the northeast have not shared in the capacity production of their integrated paper and board competitors, since inadequate supplies of purchase pulp at prices that permit competition continue to present their chief problem, writes the Department. In the paper-producing region of southern Ohio, mills also are experiencing difficulty in procuring the higher grades of waste paper employed as a pulp substitute. In the Lake States area, an easing is reported in all grades except market bleached sulphate. "Despite this apparently favorable note, some non-integrated mills of the Lake States district are restricting weekly operations to five days and a few are expected to be closed down, high production costs having placed them in a non-competitive position. The task of selling in competition that portion of their production which utilizes the higher-priced European pulps is daily becoming a problem more difficult of solution." Increasingly the mills are resolving the matter by restricting their pulp buying to lower-priced domestic and Canadian pulps. Reluctance of U.S. pulp consumers to pay the high overseas prices continues to be reported. "No apparent difficulty is being experienced by the Swedish producers in finding a market in Europe and elsewhere for pulp not taken up by U.S. consumers," the Department reports.

"Prices and the availability of dollar exchange continue as dominant factors in international movements of market wood pulp. While no concrete instances are reported of any general rise in third quarter contract prices of domestic and Canadian pulp, trade reports indicate that it will be more and more difficult for producers in the U.S. and Canada to maintain present price levels under pressure of mounting costs of labor, raw materials, transportation and other items that determine minimum sales levels. As regards pulp suppliers in northern Europe, reports from that area to the U.S. Dept. of Commerce have consistently refused to admit the possibility of any near-term reduction in pulp prices. Despite these intimations, evidences of individual cases of price modifications by Scandinavian producers have been indicated by industry observers. Moreover trade reports of recent date refer to Swedish offerings of pulp to France at a substantial discount below former prices but on a basis of dollar payment. These straws in the wind, while inconclusive in themselves, would seem to offer some encouragement to pulp consumers in the U.S. unable to fill their pulp requirements from North American sources and who must depend on overseas pulp at noncompetitive price levels. There is, however, a reasonable assumption that many of the non-integrated mills which have curtailed production as a direct result of high European pulp prices would restore most of that production if these prices were subject to downward adjustment."

Total receipts of market pulp by U.S. paper and board mills during the first five months of 1948 were 124,000 tons, or 12 percent ahead of the same months of 1947. Total consumption registered a gain of 90,000 tons or nearly 9 percent over the same period of 1947. Domestic pulp production, inclusive of market pulp as well as that for "own use" gained 338,000 tons or nearly 7 percent during the first 5 months of 1948 in comparison with the same pe-

(Continued on page 28)

Take a look at your toughest competitors...

CHLORINATION CAN HELP YOU LICK THEM

You can't see your toughest competitors, bacteria, except through a microscope. However, no microscope is needed to see the damage they do in producing slime, odors, off-color stock, or poor sizing. These organisms hit fast and hard throughout your mill by infecting both your fresh and white water, and by causing heavy slime in such spots as screens, vats, head boxes and piping.

To overcome this slime formation and get *complete* protection, mills across the country are turning to Break-Point Chlorination engineered by W&T. Used either singly on your fresh water supply or in conjunction with chloramines and other corrective chemicals for stock or white water treatment, Break-Point Chlorination eliminates slime spots, slime films on fibers, pin holes, odors, and many other similar troubles.

W&T with over thirty years' experience on thousands of installations, conducts a thorough survey of each requirement before making specific recommendations. You can thus be sure that the Break-Point Process will be carefully fitted to meet your own particular needs. Write today.

1-17

WALLACE & TIERNAN
COMPANY, INC.
CHLORINE AND CHEMICAL CONTROL EQUIPMENT
NEWARK 1, NEW JERSEY • REPRESENTED IN PRINCIPAL CITIES

IMPORTS

Week Ended July 31

NEW YORK

Newsprint

News Syndicate Co. Inc., Colabee, Baie Comeau, 8214 rolls.

R. A. Olsen Inc., Newscarrier, Donnacona, 437 rolls.

(———), Hillcrest Park, London, 45 rolls.

R. A. Olsen Inc., G.D.D., Donnacona, 435 rolls.

Gilman Paper Co., Stockholm, Gothenburg, 149 rolls.

N. Y. Journal American, Markland, Liverpool, N. S., 795 rolls.

N. Y. Herald Tribune, Markland, Liverpool, N. S., 1784 rolls.

N. Y. World Telegram, Markland, Liverpool, N. S., 446 rolls.

Brooklyn Eagle, Markland, Liverpool, N. S., 692 rolls.

Herald Statesman, Inc., Markland, Liverpool, N. S., 42 rolls.

Washington Post, (Alexandria, Va.), Markland, Liverpool, N. S., 2707 rolls.

Alexandria Gazette, (Alexandria, Va.), Markland, Liverpool, N. S., 36 rolls.

Washington Daily News, Markland, Liverpool, N. S., 337 rolls.

H. G. Craig Co., Kermic, Donnacona, 342 rolls.

Wrapping Paper

Lafayette National Bank, Stockholm, Gothenburg, 52 rolls.

Lawyers Trust Co., Stockholm, Gothenburg, 195 rolls.

The Borregaard Co. Inc., Stockholm, Gothenburg, 70 rolls, 52 bls.

Sulphite Paper

Greenwich Paper Products Inc., Stockholm, Gothenburg, 60 rolls (unbleached).

Filter Paper

H. Reeve Angel & Co. Inc., Hillcrest Park, London, 19 cs.

C. H. Kent, Stockholm, Gothenburg, 1 cs.

Photo Paper

American Express Co., Hillcrest Park, London, 162 drums (base).

Medo Photo Supply Co., American Farmer, London, 3 cs.

J. J. Gavin & Co., Queen Mary, Southampton, 4 cs. (unsensitized).

Paperhangings

W. H. S. Lloyd & Co., American Farmer, London, 40 pkgs.

Drawing Paper

Lansen Naeve Corp., Wisconsin, Havre, 19 cs.

Writing Paper

American Express Co., Wisconsin, Havre, 5 cs.

Serviettes

(———), Britannic, Liverpool, 10 crates (crepe paper).

Gummed Paper

B. F. Drakenfeld & Co., Britannic, Liverpool, 38 cs.

Rags, Baggings, Etc.

Loumar Textile By-Products Inc., Jean La Fitte, Antwerp, 107 bls. old waste bagging.

Royal Manufacturing Co., Jean La Fitte, Antwerp, 20 bls. old bagging, 61 bls. cotton waste.

Kauders Steuber Co., Pobeda, Odessa, 335 bls. cotton waste.

Railway Supply & Manufacturing Co., Uruguay, Rio de Janiero, 75 bls. cotton waste.

J. Eisenberg, Agwimonte, Vera Cruz, 21 bls. woolen rags.

American Express Co., Britannic, Liverpool, 12 bls. new wool rags.

Chase National Bank, Paducah Victory, Melbourne, 16 bls. colored hosiery clips.

Bank of Australia, Paducah Victory, Melbourne, 41 bls. tailors clips.

1st National Bank of Boston, Hellenic Beach, Piraeus, 216 bls. rags.

Casein

The Borden Co. Chemical Division, Binghampton Victory, Buenos Aires, 1100 bags (ground lactic), 55,000 kilos.

American Cyanamid Co., Uruguay, Buenos Aires, 2500 bags, 125,000 kilos.

The Borden Co. Chemical Division, Uruguay, Buenos Aires, 1800 bags (ground lactic), 90,000 kilos.

Gluestock, Etc.

Darmstadt Scott & Courtney, Agwimonte, Vera Cruz, 324 bls. fleshings.

Irving Trust Co., Santa Monica, Barranquilla, 106 bags gluestock.

Woodpulp

Price & Pierce, Ltd., Markland, Liverpool, N.S., 1449 bls. unbleached sulphite pulp, 152 tons.

Bulkley Dunton Pulp Co., Stockholm, Gothenburg, 2159 bls. dry strong unbleached sulphite pulp, 431 tons.

Caustic Soda Quota

WASHINGTON—A supplemental export quota of 4,300 tons of caustic soda was established by the Office of International Trade on July 29 to enable the Colorado Fuel & Iron Corp., as operator of an Army stand-by plant at Denver, Colo., to dispose of surplus stocks of caustic soda, without reference to the price restrictions ordinarily imposed.

The plant operates some distance from raw materials sources, it was pointed out, so that its costs have prohibited it from the export trade under the price criteria policy established some time ago by the Government for licensing exports.

To enable it to clear its facilities of material in storage, and to export it under these limitations, the additional quota was authorized.

Panama's Newsprint Needs

WASHINGTON — Panama's newsprint requirements for 1948 are expected to total 4,800 metric tons, according to the U.S. Department of Commerce.

Although the United States has furnished a large share of Panama's requirements of paper and paper products, Canada, Denmark, Sweden and other European countries have supplied a considerable amount of newsprint as well as other types of paper, it is reported. The United States' exports of paper and related products to Panama in 1947 were valued at $1,269,742, the report added.

Wood Pulp Imports

WASHINGTON—Imports of wood pulp into the United States from all sources totaled 213,148 short tons in June 1948, according to preliminary figures, as compared with 227,246 tons in June 1947, representing a decrease of 6.2 percent the Office of International Trade, Department of Commerce, reported on July 23.

Canada was principal supplier in both years. Imports from Canada in June, 1948, totaled 150,473 tons, an increase of 14.4 percent over June, 1947.

Imports from Sweden in June, 1948, were 56,084 tons; 11 percent less than in June of last year. Pulp imports from Finland amounted to 3,310 tons in June, while a year ago 29,323 tons were received. Pulp imported from Norway in June, 1948, amounted to 3,067 tons as compared with none in June, 1947.

Of total imports of all grades in June, 23,417 tons were of rayon and special chemical grades of bleached sulphite, and the balance, 189,731 tons, was paper grade pulp.

Sweden Machinery Priority

WASHINGTON — Replacement parts for machinery used in production of goods and commodities for export to hard-currency areas will get priority over other machinery imports into Sweden, under a government decision reported here on July 29 through official channels.

As a result of the shortage of hard currency in Sweden, it is reported, shipment of complete sets of machinery from hard currency areas will be drastically limited. However, the report continued, curtailed imports of machinery have had an adverse effect on normal output of Swedish mechanical shops, manufacturers of electrical equipment among them.

Trends

(Continued from page 26)

riod 1947. Largest proportionate gain was made in bleached sulphate, with bleached sulphite, percentagewise, running behind the over-all rate of increase.

Indexes

Index of general business activity for the week ended July 24 fell to 149.3 from 152.5 in the preceding week, compared with 144.4 for the corresponding week of 1947.

Index of paperboard production sloped to 172.6 from 172.2 in the preceding week, compared with 174.2 for the corresponding week of 1947.

Comparative ratios of U.S. paper and paperboard production to mill capacity as reported by AP&PA are shown below:

	July 24 1948	July 17 1948	July 26 1947	July 27 1946	July 28 1945
Paper*	105.2	87.1	106.1	104.7	93.4
Paperboard ..	91.0	84.1	99.0	95.0	95.0

* Tonnage production was greater than last year's, although because of a 13.3% increase in 1948 capacity, the production ratio is lower.

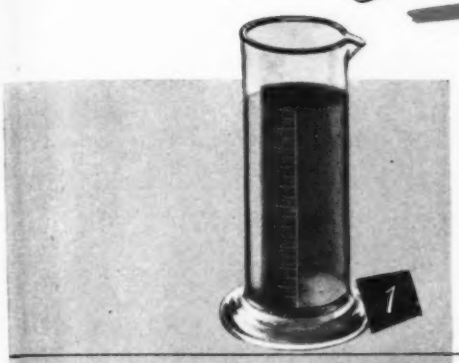
Paperboard Production Statistics

	For Weeks Ended July 24 1948	July 17 1948	July 26 1947
Production	175,182	157,641	176,856
New Orders	159,210	138,409	163,539
Unfilled Orders	360,981	372,739	461,226

Percent of Activity—Current 91%.

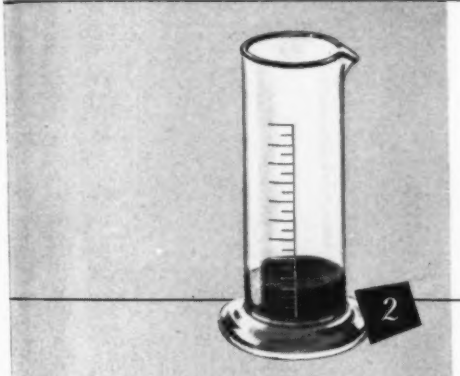
Percent of Activity—Year to Date 98%.

GULFCREST is the only turbine oil that gets this extra refining*

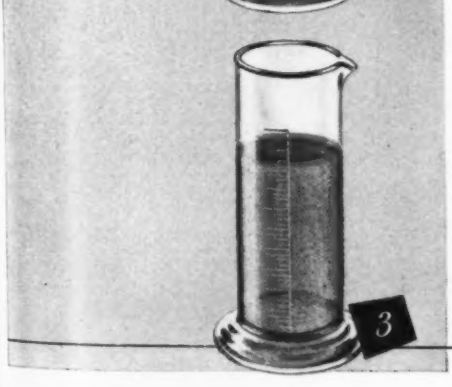


Gulfcrest is the only turbine oil that's Alchlor-processed.* This is an extra refining step. It makes Gulfcrest extra pure and extra efficient.

In Cylinder 1 you see the oil that will become Gulfcrest. It has already gone through the usual steps used in refining other turbine oils—but has not yet been Alchlor-processed.*



In Cylinder 2 you see the part—approximately 15%—discarded by the Alchlor Process.* This is the part that, when allowed to remain in turbine oil, is most likely to oxidize, increase neutralization number, and form sludge, emulsifiers, and harmful acids.



In Cylinder 3 you see the finished Gulfcrest—the incomparably pure lubricating oil that gives outstanding performance and helps keep steam turbine systems clean indefinitely. To make it even finer, special inhibitors are added to it—they give it still greater stability and protect against corrosion.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation
Gulf Refining Company

Call in a Gulf Lubrication Engineer today and ask him to recommend the proper grade of Gulfcrest Oil to meet the specific requirements of your turbines. Write, wire, or phone your nearest Gulf office.

Division Sales Offices: Boston • New York • Philadelphia • Pittsburgh • Atlanta • New Orleans • Houston • Louisville • Toledo

PRICES

Quotations indicate trends in an open market. At the moment they can be of little more value. While some volume business still is done under contract at the figures shown, fluctuations are too varied and frequent to permit prices to be interpreted as representing a wholly stabilized market.

NEW YORK

Paper

(Delivered New York)

Standard News, per ton—
- Rolls, contract $96.00/100.00
- Sheets ..... 111.00/ —

Kraft—per cwt.—Carload Quantities Zone A
Deld. 40 lb. base wgt.
- Superstandard Wrapping ..... $9.00/ —
- No. 1 Wrapping 7.25/ 8.00
- Standard Wrapping ..... 6.50/ —
- Standard Bag ..... 6.50/ —

Tissues—Per Ream 24x36 (480) 11 lbs. Zone 1.
- Wh. No. 1 Frd. ..... $1.84/$2.00
- Wh. No. 1 M. G. 1.94/ 2.00
- Wh. No. 1½ ..... 1.60/ —
- Wh. No. 2 ..... 1.75/ —
- Kraft Anti-Tar ..... 1.65/ —
- Kraft Unbl. ..... 1.85/ —
- Manila No. 2 ..... 1.62/ —
- Shred. Wh. No. 1 cwt. 1.10/ 1.50

Toilet—Per Case of 100 rolls—1 M Sheets.
- Unbleached ..... $8.50/$10.00
- Bleached 8.50/ 10.00

Paper Towels—Per Case of 3750—Zone 1.
- Wh. Jr. M'tif'd 9¼x9½ $5.15
- Br. Sr. M'tif'd 10x12 ..... 3.60
- Br. Jr. M'tif'd 9½x9¾ 3.10
- Br. Jr. Sgl. fold 10x10¾ 3.15

Manila—per cwt.—C-1 f.a.
- No. 1 Jute Tag ..... $14.50/ —
- Reg. Jute Manila ..... 13.25/$15.50
- No. 1 Manila ..... 9.75/ —
- 5 lb. Manila 10.75/ 11.25

Boards, per ton—
- Plain News ..... $92.50/ —
- Filled News ..... 94.00/ —
- Plain Chip ..... 90.00/ —
- Sgl. Mla. L-d. Chip* 100.00/102.50
- White Pat. coated* ..... 120.00/ —
- Kraft Liners 42 lb. ..... 100.00/ —
- Kraft Corr. .009 ..... 105.00/ —
- Binders Boards ..... 126.00/ —

* Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following prices are representative of distributors' resale prices, all deliveries in Zone 1:

Rag Content Bonds and Ledgers—
White, 16 lb.
Bonds, per cwt.

	Carton	4 C't'n	Ton
100% Rag Ext. No. 1	$55.00	$50.80	$48.70
100% Rag	48.25	44.55	42.70
75% Rag	37.50	34.55	33.10
50% Rag	32.25	29.40	28.25
25% Rag	28.75	26.15	25.10

Ledgers, per cwt.

100% Rag Ext. No. 1	$55.00	$50.80	$48.70
100% Rag	48.25	44.55	42.70
75% Rag	37.50	34.55	33.10
50% Rag	32.25	29.40	28.25
25% Rag	28.75	26.15	25.10

Sulphite Bonds and Ledgers—
White, 16 lbs.
Bonds, per cwt.

No. 1	$21.25	$19.25	$18.50
No. 2	20.25	18.30	17.55
No. 4	19.25	17.55	16.85

Ledgers, per cwt.

No. 1	$21.75	$19.65	$18.85
No. 2	20.75	18.75	18.05
No. 4	20.00	18.10	17.35

Free Sheet Book Papers—
White, Cased Paper

	(Per cwt.) Case	Ton
No. 1 Glossy Coated	$20.40	$19.50
No. 2 Glossy Coated	19.15	18.30
No. 3 Glossy Coated	18.40	17.60
No. 1 Antique (Watermarked)	15.90	15.15
No. 2 Offset	15.15 to 17.90	14.60 to 17.10
A Grade E. F.	14.90	14.25
A Grade S. & S. C.	15.40	14.65
B Grade E. F.	13.90	13.30
B Grade S. C.	14.40	13.70

Wood Pulp

Domestic mill contract prices delivered with varying freight allowances.

	Per Short ADT
Groundwood	$80.00/$81.00
Unbleached Sulphite	124.00/ —
Bleached Sulphite	125.00/135.00
Bleached Soda	130.00/ —
Bleached Sulphate	175.00/185.00
Unbleached Sulphate Northern	125.00/155.00
Unbleached Sulphate Southern	130.00/145.00

Canadian Quotations

Prices delivered with varying freight allowances unless otherwise specified:

	Per Short ADT
Bleached Sulphate	160.00/185.00
Unbleached Sulphate	125.00/150.00
Unbleached Sulphite	125.00/126.00
Bleached Sulphite	125.00/135.00
Glassine Unbleached Sulphite (no freight allowance)	120.00/ —
Bleached Soda	130.00/ —
Groundwood	80.00/ 85.00
Sideruns Pulping News	80.00/ 90.00
Hardwood and Specialty Grades	Nominal

* Note—Above quotations are correct. Those published in July 1 issue were incorrect.

Swedish Quotations

On dock, Atlantic Ports

Bleached Kraft	185.00/ —
Bleached Sulphite	185.00/ —
Unbleached Sulphite	155.00/157.50
Unbleached Kraft	147.50/ —

Finnish Quotations

On dock, Atlantic Ports

	Per Short ADT
Bleached Sulphite	$187.50/ —
Unbleached Sulphite	155.00/157.00
Unbleached Sulphate	147.50/ —

New Domestic Cotton Cuttings

(F.o.b. Ship. Pt. Plus Dealer's Commission)

White Shirt	$11.50/$12.00
Unbleached Muslin	12.00/ 12.50
Light Silesias	9.00/ 9.25
White Back Blue Overalls	9.00/ 9.50
Blue Overalls	8.00/ 8.25
Fancy Shirt	6.00/ 6.25
Light Percales	8.50/ 8.75
Light Prints	7.50/ 7.75
No. 1 Washables	5.00/ 5.25
Bleachable Khaki	7.50/ 8.00
Unbleachable Khaki	6.50/ 7.00
Cottonades	5.50/ 5.75

Old Domestic Cotton Rags

(F.o.b. Ship. Pt. Plus Dealer's Commission)

	Per 100 lbs.
No. 1 Whites Repacked	$5.50/ $6.00
No. 1 Whites Miscellaneous	4.50/ 5.00
No. 2 Whites Repacked	3.50/ 3.75
No. 2 Whites Miscellaneous	3.00/ 3.50
Blue Overalls	3.75/ 4.00
Thirds and Blues Repacked	3.25/ 3.50
No. 1 Roofing Rags	1.70/ 1.80
No. 2 Roofing Rags	1.60/ 1.70
No. 3 Jute Bagging	1.50/ 1.60
No. 4 Brussels and hard back carpets	1.50/ 1.60
No. 5A Roofing Rags	1.50/ 1.60

New Foreign Cotton Cuttings

(Prices to Mill, F.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	$5.50/ $5.75
New Mixed Cuttings	6.25/ 6.50
Light Silesias	9.25/ 9.50
Light Flannelettes	9.25/ 9.50
New White Cuttings	12.00/ 13.00
New Unbleached Cuttings	12.25/ 13.00
Fancy Shirt Cuttings	6.50/ 7.00
Light Prints	7.75/ 8.00
Bleachable Khaki, No. 1	7.00/ 7.50
Unbl. Khaki, No. 1	6.25/ 6.75

Old Foreign Rags

(Prices to Mill, F.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Linens	nominal
No. 2 White Linens	nominal
No. 3 White Linens	nominal
No. 4 White Linens	nominal
No. 1 White Cottons	8.00/ 10.00
No. 2 White Cottons	7.00/ 8.00
No. 3 White Cottons	6.00/ 6.50
No. 4 White Cottons	4.00/ 4.50
Extra Light Prints	6.50/ 7.00
Old Light Prints	4.50/ 5.00
Med. Light Prints	4.00/ 4.50
Dutch Blue Cottons	5.25/ 5.50
Checks and Blues	4.00/ 4.25
Linsey Garments	2.35/ 2.50
Dark Cottons, European	2.30/ 2.35
Dark Cottons, Egyptian	3.25/ 3.50
Old Shopperies	2.20/ 2.30
New Shopperies	2.25/ 2.30

Bagging

(Prices to Mill, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny, No. 1	$6.75/ $7.25
Domestic Gunny, No. 1	6.75/ 7.25
Heavy Wool Tares	6.25/ 6.50
No. 1 Scrap Baggings	5.50/ 5.75
Roofing Bagging	1.50/ 1.75
Foreign Manila Rope	6.00/ 6.75
Domestic Manila Rope	6.50/ 6.75
Jute Strings	5.00/ 5.25
No. 1 Sisal Strings	5.25/ 5.50
Mixed Strings	1.75/ 2.50

Waste Paper

Base Prices to Mills for Average Packings
F.o.b. New York, Baled

	(Per Ton)
No. 1 Hd. Wh. Env. Cts., one cut	$145.00/$155.00
No. 1 Hard White Envelope Cuts	135.00/ 145.00
No. 1 Hd. Wh. Shavings, unruled	130.00/ 140.00
No. 1 Hd. Wh. Shavings ruled	100.00/ 110.00
Soft White Shavings, one cut	130.00/ 140.00
No. 1 Soft White Shavings	115.00/ 125.00
Soft White Shavings, Misc.	105.00/ 115.00
No. 1 Fly Leaf Shavings	45.00/ —
No. 1 Gd'wd Fly Leaf Shavings	35.00/ —
No. 1 Heavy Books & Magazines	23.00/ 24.00
Mixed Books	13.00/ 15.00
No. 1 White Ledger	70.00/ 75.00
Col. Ledger	45.00/ 50.00
Manila Tab. Cards	80.00/ 85.00
New Man. Env. Cuttings, one cut	100.00/ 110.00
New Manila Envelope Cuttings	65.00/ 75.00
Extra Manilas	25.00/ 30.00
Mxd Kraft, Env. & Rag Cuttings	75.00/ 85.00
Kraft Envelope Cuttings	100.00/ 110.00
Triple Sorted, No. 1 Brown Soft Kraft	65.00/ 75.00
New Kraft Corrugated Cuttings	65.00/ 70.00
No. 1 Assorted Old Kraft	40.00/ 45.00
New Jute Corrugated Cuttings	27.00/ —
Old 100% Kraft Corr. Containers	30.00/ 35.00
Old Corrugated	14.00/ 15.00
No. 1 News	10.00/ 11.00
No. 1 Mixed Papers	7.00/ 8.00
Box Board Cuttings	7.00/ 8.00
White Blank News	65.00/ 70.00
Overissue News	14.00/ 15.00
Mill Wrappers	14.00/ 16.00

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)	
Coarse Polished—India	.35¼/ .36½
Fine Polished Fine India	.41¾/ .45
Unpolished—Paper Makers	.32 / .35½
Tube Rope	.33¼/ .35¼
Wrapping	.37 / .39
Cotton	.63¼/ .66¾
(Hard Fiber)	
Mex. Sisal	.21 / .27
Manila (Reprocessed)	.30 / .32
(American Hemp)	
Polished Hemp	.36¾/ .60
Unpolished	.32¼/ .54

PHILADELPHIA

Domestic Rags (New)

(F.o.b. Eastern Shipping Point)

Shirt Cuttings—	
New White No. 1	.10½/ .11
New White No. 2	nominal
Light Silesias	.07½/ .08
Black Silesias, soft	.06 / .06½
New Unbleached	.10½/ .11¼
Washable Prints	.06½/ .07
Washable No. 1	.05 / .05½
Blue Overall	.07½/ .08
Cottons—According to grade—	
Washable Shredding	.03 / .03½
Fancy Percales	.06¾/ .07¼
New Black Soft	nominal
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.05¾/ .06½
Bleachable Cotton Cuttings	.06½/ .07
Men's Corduroy	.05½/ .06
Ladies' Corduroy	.05 / .05½
Cottonades	.05½/ .06

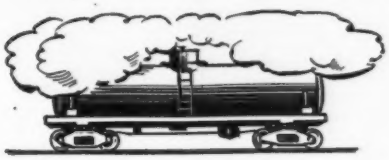
Domestic Rags (Old)

(F.o.b. Eastern Shipping Point)

White No. 1—Repacked	4.50 / 5.00
Mixed White	4.00 / 4.25
White No. 2—Repacked	3.50 / 3.75
Thirds and Blues—	
Miscellaneous	2.50 / 2.75
Repacked	3.00 / 3.25
Roofing Stock—	
Foreign No. 1	nominal
Domestic No. 1	1.65 / 1.70
Domestic No. 2	1.55 / 1.60
Roofing Bagging	1.45 / 1.50
Old Manila Rope	5.75 / 6.00

(Continued on page 32)

Putting a Blanket of Air



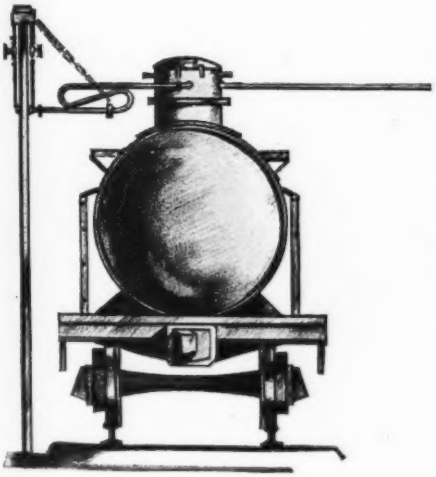
on Chlorine

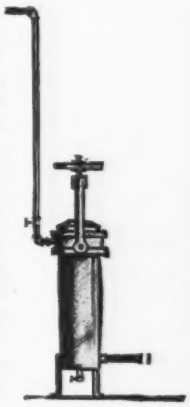
The development of a chlorine evaporator that maintained a constant gas temperature solved only a portion of the chlorine flow problem. Hooker engineers next tackled the problem of keeping the pressure constant. This was solved by applying regulated air pressure to the liquid chlorine in the tank car.

A relatively simple air cooler and drier was designed and constructed to operate in conjunction with an automatically regulated air compressor.

Another problem, that of preventing the corrosive action created by the backflow of chlorine in the air system, was also solved. To prevent this backflow, a new check valve was developed with two 7½ pound plungers. These plungers placed a mechanical pressure on the seat of the valve at the time of closure and assured a greater degree of safety against leakage of chlorine. The sum total of the two plungers being 15 pounds, pressure of the air system was maintained at 15 pounds higher than the pressure of the chlorine system.

These advances in the safe and convenient handling of chlorine are only part of the story of Hooker's long and close relationship with the pulp and paper industry. Hooker continues to provide helpful service by supplying uniform high quality chlorine, caustic soda and other chemicals. For your pulp and paper making you can always depend upon Hooker Chemicals.





HOOKER ELECTROCHEMICAL COMPANY
6 UNION STREET • NIAGARA FALLS, N. Y.
New York, New York • Wilmington, California • Tacoma, Washington

HOOKER CHEMICALS

8-721

Caustic Soda · Muriatic Acid · Sodium Sulfide · Paradichlorbenzene · Sodium Sulfhydrate · Chlorine

PRICES CONTINUED FROM PAGE 30

Bagging
(F.o.b. Eastern Shipping Point)

Gunny No. 1—		
Foreign	nominal	
Domestic	5.00	/ 5.50
No. 1 Clean Bright—		
Sisal Strings	.04½/	.05
No. 2 Clean Bright—		
Sisal Strings	.03½/	.04
Sisal Jute	.02¼/	.03
Scrap—		
No. 1	5.00	/ 5.50
No. 2	2.50	/ 3.00

Old Papers
F.o.b. Phila. Mill Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	$100.00/	$115.00
No. 1 Hard White Shavings, unruled	100.00/	—
Soft White Shavings	80.00/	—
White Blank News	65.00/	70.00
Soft White Shavings, One Cut	/	80.00
No. 1 White Ledger	65.00/	70.00
No. 1 Heavy Books & Magazines	20.00/	22.00
Overissue Magazines	nominal	
New Manila Envelope Cuttings	75.00/	—
No. 1 Assorted Old Kraft	35.00/	40.00
No. 1 Mixed Paper	8.00/	10.00
Box Board Cuttings	8.00/	10.00
Kraft Corrugated Cuttings	75.00/	80.00
Old Corrugated	20.00/	24.00
Overissue News	13.00/	15.00
No. 1 News	10.00/	12.00

BOSTON

Old Papers
F.o.b. Phila. Mill Prices, Baled

No. 1 Hard White Shavings, unruled	$6.25	/$6.75
No. 1 Hard White Shavings, ruled	6.00	/ 6.50
Soft White Shavings, Misc.	6.00	/ 6.25
No. 1 Fly Leaf Shavings	—	/ —
No. 2 Fly Leaf Shavings	4.25	/ —
No. 1 Grdwd. Fly Leaf Shvgs.	1.75	/ 2.00
No. 2 Groundwood Fly Leaf Shavings	1.50	/ 1.75
Mixed Colored Shavings	2.00	/ 2.25
New Manila Env. Cuts, one cut	4.50/	/ 4.75
Hard White Envelope Cuts, one cut	7.00	/ —
Triple S'ted No. 1 Br. Soft Kraft	3.75	/ 4.00
Mixed Kraft Env. & Bag Cuttings	4.00	/ 4.25
Kraft Envelope Cuttings	5.00	/ 5.50
No. 1 Heavy Books & Magazines	1.75	/ —
New Manila Env. Cutt'gs, one cut	—/	/
New Manila Envelope Cuttings	4.00	/ 4.25
White Tabulating Cards	5.00	/ —
Groundwood Tabulating Cards	1.50	/ 1.75
White Blank News	2.25	/ 2.50
No. 1 Assorted Old Kraft	3.50	/ 4.00
No. 1 Mixed Paper	.47½/	—
Overissue News	.90	/ 1.00
No. 1 News	.55	/ .60
Box Board Cuttings	.60	/ .70
New Corrugated Cuttings, Kraft	2.75	/ 3.00
Old Kraft Corrugated Containers	2.00	/ 2.25
Old Corrugated Containers	—	/ 1.10
Jute Corrugated Cuttings	1.07½/	—
Paper Strings	2.00	/ 2.25

Bagging
(F.o.b. Boston)

Gunny Bagging—		
Foreign	(nominal)	
Domestic	7.00	/ —
Sisal Rope No. 1	6.25	/ —
Sisal Rope, No. 2	5.50	/ —
Mixed Rope	3.00	/ —
Mixed Strings	1.60	/ —
Transmission Rope—		
Foreign	nominal	
Domestic	3.00	/ 3.50
Manila Rope—		
Foreign	nominal	
Domestic	6.75	/ —
Jute Carpet Threads	6.00	/ —
Bleachery Burlap	—	/ 7.00
Scrap Burlap—		
Foreign	6.00	/ 6.25
Domestic	6.00	/ 6.25
South America	6.00	/ 6.25
Wool Tares		
Foreign	6.25	/ —
Domestic	6.25	/ —
Austr. Wool Pouches	7.50	/ —
New Zealand Wool Pouches	7.50	/ —
New Burlap Cuttings	6.50	/ —
Heavy Baling Bagging	5.25	/ 5.75
Paper Mill Bagging	5.50	/ 5.75
No. 1 Roofing Bagging	2.25	/ 2.50

Domestic Rags (New)
(F.o.b. Boston)

Shirt Cuttings—		
New Light Prints	.07½/	—
Fancy Percales	.08	/ —
New White No. 1	.11	/ .11¾
New Light Flannelettes	.08	/ .08½
Canton Flannels, Bleached	.10	/ .11
Underwear Cutters, Bleached	.11½/	—
Underwear Cutters, Unbleached	.11	/ .12
Silesias No. 1	.08	/ .08½
New Black Silestas	.04½/	—
Red Cotton Cuttings	.05	/ —
Blue Overalls	—	/ .08½
Soft Unbleached	.11	/ .12
Blue Cheviots	.08½/	.09
Fancy	.06	/ —
Washable	.06	/ —
Khaki Cuttings	.06½/	.07½
Corduroy	.03½/	—
Men's Corduroy	.04	/ —
Khaki Canvas	—	/ .06
B. V. D. Cuttings	.11½/	—

Domestic Rags (Old)
(F.o.b. Boston)

White No. 1—		
Repacked	5.00	/ 5.50
Miscellaneous	4.50	/ 5.00
White No. 2—		
Miscellaneous	2.65	/ —
Twos and Blues, Repacked	2.75	/ —
Old Blue Overalls	4.00	/ 4.50
Thirds and Blues, Repacked	2.20	/ —
Miscellaneous	1.80	/ —
Black Stockings	3.50	/ 4.00
Roofing Stock—		
No. 1	1.70	/ —
No. 2	1.60	/ —
No. 3	1.50	/ —
No. 4	1.50	/ —
No. 5, Quality A.	1.60	/ —
Quality B.	1.50	/ —
Quality C.	.95	/ —
Old Manila Rope	6.00	/ —

Foreign Rags
(F.o.b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper
(F.o.b. Chicago) Mill Prices, Baled

Shavings—		
No. 1 Hard White Envelope cuts, one cut	$150.00/	—
No. 1 Hard White Shavings, unruled	140.00/	—
No. 1 Soft White Shavings	120.00/	—
No. 1 White Ledger	85.00/	—
No. 1 Heavy Books & Magazines	35.00/	—
White Blank News	80.00/	85.00
Mixed Kraft Env. & Bag Cuttings	90.00/	110.00
No. 1 Assorted Old Kraft	35.00/	—
Overissue News	24.00/	—
No. 1 News	11.00/	—
No. 1 Mixed Paper	11.00/	—
Old Corrugated	23.00/	—
Mill Wrappers	17.00/	—

MARKETS

Blanc Fixe
Demand strong. Prices firm. Pulp is currently quoted at $87.00 in bags, car lots at works, 6 cents per pound, l.c.l., deld.; by-product $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder
Supply adequate. Delivery good. Shortage of shipping containers restricts export. Prices range from $4.25 to $4.50 per 100 pound drums, l.c.l. works.

Casein
Demand dull. Argentine prices dip. Domestic supply limited, with shortage foreseen by September. Current prices on processed acid precipitated casein at 31 to 33 cents per pound for domestic grades and 27½ to 28¾ cents for imported grades, f.o.b. shipping point.

Caustic Soda
Strike settled. Supply extremely tight. Solid caustic is reported at $3.10 per cwt.; flaked and ground is quoted at $3.50 per cwt. in 400 pound drums, $4 to $4.25 per cwt. in 100 pound drums—car lots at works; liquid 50 percent in tank cars at $2.50 per cwt.; liquid 73 percent in tank cars at $2.60 per cwt., at works.

China Clay
Supply excellent. Demand steady. Domestic filled clay is $9 to $11.50 per ton, car lots; coating clay is $14 to $22. Imported clay quotation, short tons, $16 to $35, export warehouse.

Chlorine
Settlement of strike not likely to bring much easement to supply situation. Heavy summer demand and shortage of tankers aggravates situation. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt., in multi-unit tank cars, f.o.b., works.

Rosin
Price steady. Buying improves. Export outlook good. Gum rosin in drums per 100 pounds net in car lots, f.o.b. Savannah; B, $6.50; G, $7.25; H, $7.31; I, K, $7.32. Wood rosin per 100 pounds net, car lots, f.o.b. Savannah; B, $5.00; FF, $6.50.

Rosin Size
Seventy percent gum and pale wood grades. Supply ample. Demand good. Tank cars, $6.15 to $6.25, f.o.b. southern shipping point.

Salt Cake
Demand continues ahead of supply with slight improvement in shipments. Production under contract. Domestic salt cake quoted at $25 to $28.

Soda Ash
Supply continues to ease. Deliveries close to schedule. Export likely to expand. Current prices, car lots, per 100 pounds; in bulk, $1.15; in paper bags, $1.40; and in barrels, $1.90.

Sodium Bicarbonate
Strong demand with supply good. Reported as $1.95 per cwt. paper bags, carload lots.

Starch
Supply good. Easy demand against contracts. Prices unchanged. Pearl grade quoted at $7.00 per 100 pounds; powdered starch at $7.12 per 100 pounds; car lots, New York.

Sulphate of Alumina
Demand increased. Supply steady. The commercial grades are quoted at from $1.30 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

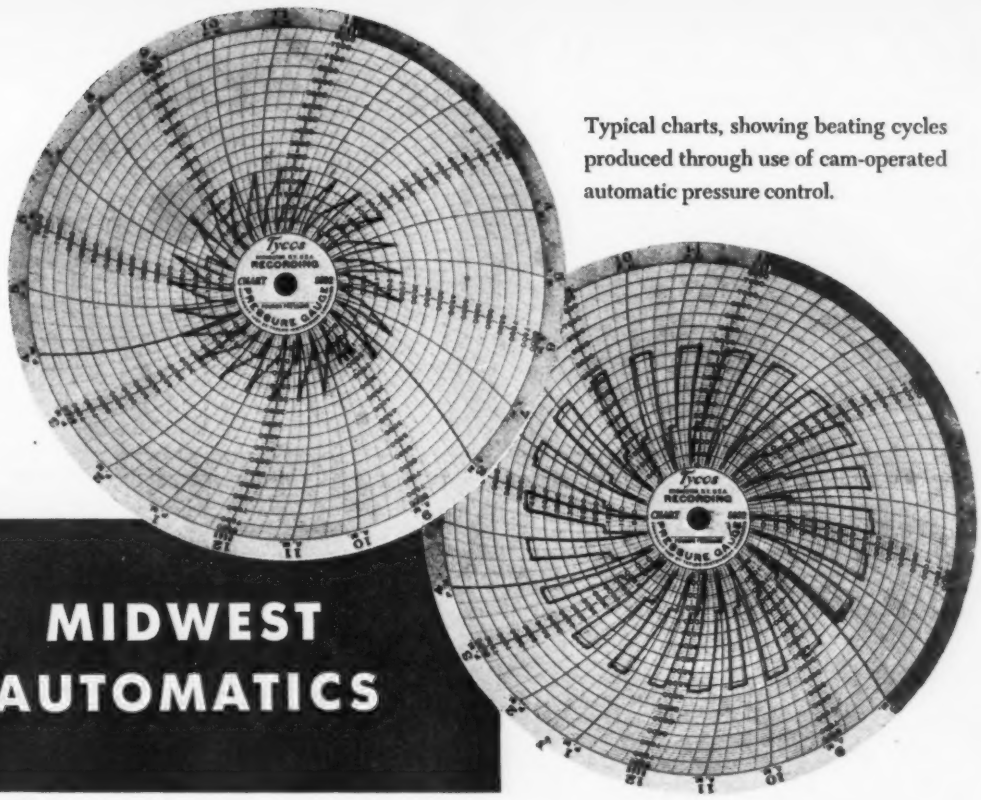
Sulphur
Production shows heavy gain. Prices unchanged. Supplies ample. Annual contracts are quoted at $16 to $18 per long ton, f.o.b. mines; the price f.o.b. at Gulf ports is $17.50 to $19.50 per long ton.

Talc
Demand continues far in excess of supply. Prices steady. Domestic grades are currently quoted at $23 per ton in paper sacks, f.o.b. mills; Canadian at $35 and up per ton. All prices in cart lots.

Titanium Dioxide
Demand continues extremely tight with no early improvement seen. Shipments on allocation. Anastase 17½-18c pound carload lots, 18-19c l.c.l., rutile, 19½-20c pound carload lots, 20-21c l.c.l.; 50-pound bags, f.o.b. plant, minimum freight allowance.

Goodyear Chemical Division

AKRON, Ohio—Organization of a chemical division by The Goodyear Tire & Rubber Co. to handle expanding sales of synthetic rubber and its combination with other raw chemicals is nearing completion. Herman R. Thies is manager of the new division.



Typical charts, showing beating cycles produced through use of cam-operated automatic pressure control.

MIDWEST AUTOMATICS

MOST ECONOMICAL BEATER MONEY CAN BUY

Have you real control of your furnishes? Using a Midwest Automatic Precision Beater, you can duplicate absolutely at any future date this morning's furnish.

Have you so many ordinary beaters that you're actually stumbling over them? If so, you can discard several of them, install one Midwest Automatic and do the same amount of hydrating.

Does your beater power bill "curl your hair?" If so, you can cut it more than half and still do as much work on your stock.

Is beater repair becoming a drain on you? If so, we can show you a beater that's so precision-built and so corrosion-resistant that maintenance literally drops close to zero and will stay there for years to come.

You might say the Midwest Automatic Precision Beater is too scientifically and too well built . . . makes it costly. We say, and can prove, that "all-in-all it's the most economical beater money can buy."

ALSO BUILDERS OF

Midwest-Fulton Dryer Drainage Systems • Standard Beaters
Midwest Pulpers — Auto-Flex Dryer Syphons
Agitation Equipment — Ball Sight-Flow Indicators, etc.

Form no advanced opinions. Get the facts and then decide. Write

THE MIDWEST-FULTON MACHINE CO., DAYTON 1, OHIO

MIDWEST AUTOMATIC PRECISION BEATERS

FOR CAPACITY, CONTROL, POWER, MAINTENANCE

FINANCIAL RECORD

Preferred Stocks	Per Share 1947	Earnings 12 Mos. to Approx. 3/31/48	Indic. Annual Divid. Rate	Aug. 4 Closing Market Price
Armstrong Cork Co. $3.75 Cum.	$59.74		$3.75	96½
Armstrong Cork Co. $4.00 Cum. Conv.	25.85		4.00	113¼
Celotex Corp. 5% Cum.	24.25c	$25.99f	1.00	
Champion Paper & Fibre $4.50 Cum.	65.90i		4.50	
Container Corp. of Amer. 4% Cum.	102.74	88.25j	4.00	
Crown Zellerbach $4.20 Cum.	56.40i		4.20	100¼
Crown Zellerbach $4.00 Cum. Conv. 2nd	211.39i		4.00	112½
Dixies Cup Co. $2.50 Cum. Conv. Cl. A	9.16	8.59j	2.50	
Flintkote Co. $4 Cum.	81.91	81.06	4.00	
Robert Gair Co. Inc. 6% Cum.	18.01	16.26j	1.20	
International Paper Co. $4 Cum.	236.51	243.69	4.00	
Johns Manville $3.50 Cum.	128.81	134.48j	3.50	
Kimberly Clark Corp. 4½% Cum.	70.03		4.50	
Kimberly Clark Corp. 4% Cum. Conv. 2nd	95.88		4.00	
MacAndrews & Forbes 6% Cum.	62.20	62.56j	6.00	
Mead Corp. 4¼% Cum.	81.56	79.88	4.25	
Mead Corp. 4% Cum. Conv. 2nd	53.34	31.11	2.00	
Paraffine Cos. Inc. 4% Cum. Conv.	136.19a	151.93	4.00	
Rayonier Inc. $2 Cum.	13.58	15.44j	2.00	33¾
St. Regis Paper Co. 4.40% 1st A	76.93	84.43j	4.40	89½
Scott Paper Co. $3.40 Cum.	43.95	45.37	3.40	
U. S. Gypsum Co. 7% Cum.	211.34	231.37	7.00	
United Wallpaper Inc. 4% Cum. Conv.	46.06a	11.13	2.00	
West Virginia Pulp & Paper 4½% Cum.	75.75c	75.44	4.50	
Common Stocks				
APW Products Co.	$1.24	$1.46j	$0.25	5⅜
American Writing Paper Corp.	1.61	1.07	0.25	6¼
Armstrong Cork Co.	6.41		2.60	53¾
Celotex Corp.	6.59c	7.08f	1.50	29¾
Certain-Teed Prods. Corp.	3.75	3.83	0.90	17⅛
Champion Paper & Fibre	5.57i		1.50	2[illegible]
Congoleum Nairn Co.	4.55	5.12j	2.00	33½
Container Corp. of America	10.09	8.50j	2.00e	35
Crown Zellerbach	6.81i		2.00	30⅜
Dixie Cup Co.	5.87	5.37j	1.00	
Dixie Cup Co. A				
Flintkote Co.	6.27	6.16	2.50	34¾
Robert Gair Co. Inc.	2.83	2.59j	0.40	8¼
Great Northern Paper Co.	4.56		2.40	39⅞
International Paper Co.	15.02	15.49	4.00	58
Johns-Manville Corp.	3.17	3.28j	1.40	35⅜
Kimberly-Clark Corp.	4.29		1.40	21
MacAndrews & Forbes Co.	3.68	3.70j	2.50	
Marathon Corp.	3.39c	3.61f	1.40	
Mead Corp.	7.33	7.10j	2.00	
National Container Corp.	4.13	3.59	1.20	11½
Paraffine Cos. Inc.	2.14a	2.39	1.20	
Rayonier, Inc.	7.30	8.47j	1.00	34½
Ruberoid Co.	10.88	12.13j	2.75	
St. Regis Paper Co.	2.66	2.87j	0.60e	12⅛
Scott Paper Co.	3.02	3.13	2.20	
Sutherland Paper Co.	6.87	6.56j	2.50	40⅜
Taggart Corp.	1.29		0.60	
Union Bag & Paper Corp.	7.93	8.29	3.00	
United Board & Carton	5.11b	4.92f	1.00	36
U. S. Gypsum Co.	10.00	10.98	4.00	100½
United Wallpaper	1.46a	0.28		4⅜
West Virginia Pulp & Paper	11.40c	11.36	3.00	47

(a) Year ended 6/30/47
(b) Year ended 5/30/47
(c) Year ended October 31, 1947
(e) Plus extras
(f) 12 Months to approximately April 30, 1948
(g) Year ended approximately April 30, 1947
(h) 12 Months to approximately January 30
(i) Year ended April 30, 1948
(j) Twelve mo. to approximately June 30, 1948

Dividends Declared

BERLIN, N. H. — Brown Co. and its Canadian subsidiary, Brown Corp. of La Tuque, P.Q., reported consolidated net profit of $2,303,335 for the 28 weeks ended June 12, 1948, compared with $1,524,004 for the like period of 1947.

ALBANY, N. Y. — A.P.W. Products Co., Inc., reported for the six months ended June 26, 1948, net profit of $149,046 or 63 cents a share, compared with net of $98,560 and 42 cents a share for like period of 1947.

For the quarter ended March 27, 1948, net profit was reported at $83,238 or 36 cents a share, compared with net of $32,308 or 14 cents a share in comparable period of 1947.

MONTREAL — Consolidated Paper Corp. Ltd. and subsidiaries reported unaudited new profits of $6,325,155 after provision for taxes of $3,655,000 and $500,000 for future inventory decline, but inclusive of $436,486 profit from investment security sales.

National Gypsum Co.

BUFFALO, N.Y.—National Gypsum Co. reported net income of $3,337,537, or $1.49 a share on 2,112,336 outstanding shares, for the six months ended June 30. This compared with $2,531,446, or $1.39 a share on 1,689,869 outstanding shares, in the first half of 1947. Record sales in the first half of 1948 of $31,896,306 compared with $23,998,469 in the corresponding six months a year ago.

For the second quarter of 1948, the company had net profit of $1,815,604, or 81 cents a share, compared with $1,216,829, or 66 cents a share, in the same quarter last year. Sales in the second quarter of this year hit a new record of $16,508,292 contrasted to $12,378,574 in the second quarter last year.

"With plant construction practically completed," President Melvin H. Baker said in a report to stockholders, "expanded capacity and continued demand for our products should result in a further increase in sales during the next six months."

Bathurst Power & Paper

MONTREAL, Que. — Bathurst Power & Paper Co., reported an increase of more than 40 percent in net profits for the quarter ending March 31, 1948. Profits at $423,149 ($301,549) 1947 quarter, were equal to earnings on the 400,000 outstanding class-A common shares before participation of $1.05 per share (75 cents). After participation, Class A earned 81c and Class B 31c (64 and 14c respectively in 1947).

Estimated earnings before depreciation and taxes were $832,277 ($670,049). Provision for depreciation and depletion was down slightly at $149,963, while reserve for taxes increased to $259,165. Current assets as of March 31 including cash and marketable securities of $2,792,524, were $9,447,904; and current liabilities were $1,937,797.

Dennison Mfg. Co.

FRAMINGHAM, Mass. — Dennison Mfg. Co. estimates consolidated earnings for the six months to June 30 at $720,000, compared with a revised estimate of $922,000 for the comparable period of 1947.

Consolidated sales for the period amounted to $12,842,000, compared with $12,526,000 in the first half of 1947.

Orders received at the end of June were $1,500,000 ahead of last year, with a considerable portion of the increase in Christmas merchandise which will be shipped later, the report noted. Present indications are that sales for the entire year will run somewhat ahead of last year, Henry S. Dennison, president, said.

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TABLE III — Detail of Important Financing — U. S. Pulp, Paper and Paper Products Industries (Data from available public information)

First Six Months 1948

Bonds and Other Long Term Debt

Company	Interest Rate, %	Maturity	Amount	Total
Brunswick Pulp & Paper Co.	3¼	1963	$3,200,000	
Dixie Cup Co.	3⅞-3¾	1963	6,500,000	
Marathon Corp.	3	1949-58	8,000,000	
Champion Paper & Fibre Co.	3¼	1965	4,180,000	
Champion Paper & Fibre Co.	2½	1950-53	1,320,000	
Hawley Pulp & Paper Co.	4	1961	4,000,000	
Total Debt				$27,200,000

Preferred Stocks

NONE

Common Stocks

	No. of Shares	Amount of Offer. Price	
Dryden Paper Co.	20,000	$500,000	
Total Common Stocks			$500,000
Total reported for 1948 (6 months)			$27,700,000

1947

Bonds and Other Long Term Debt

Company	Interest Rate, %	Maturity	Amount	Total
Lily-Tulip Cup Corp.	3⅛	1967	$2,000,000	
Mosinee Paper Mills Co.	3¾	1961	1,250,000	
General Box Co.	2½-3	1947-56	1,500,000	
West Virginia Pulp & Paper Co.	1¾	1957	10,000,000	
Hudson Pulp & Paper Corp.	3½	1966	1,000,000	
P. H. Glatfelter	3½	1967	3,000,000	
Dixie Cup Co.	2¼	1955	5,500,000	
St. Regis Paper Co.	2.80	1967	10,000,000	
Brunswick Pulp & Paper Co.	2⅛	1948-57	4,450,000	
Eastern Corp.	2	1948-52	2,000,000	
Total Debt				$40,700,000

Preferred Stocks

	Rate, %	No. of Shares	Amount at Offer. Price	
Container Corp. of America	4	100,000	$10,150,000	
P. H. Glatfelter Co.	5	6,243	630,000	
Total Preferred Stocks				$10,780,000

Common Stocks

Carpenter Paper Co.	40,000	$2,120,000	
American Box Board Co.	50,000	1,050,000	
Union Bag & Paper Corp.	211,861	5,508,000	
Total Common Stocks			$8,678,000
Total reported for 1947			$60,158,000

1946

Bonds and Other Long Term Debt

Company	Interest Rate, %	Maturity	Amount	Total
Sutherland Paper Co.	2.1	1955	$1,500,000	
Fort Wayne Corrugated Paper Co.	3½	1961	1,000,000	
Gair (Robert) Co.	3½	1966	6,000,000	
Gair (Robert) Co.	2¾	1946-54	4,000,000	
Mead Corp.	3	1966	12,000,000	
Hudson Pulp & Paper Corp.	3½	1966	3,000,000	
Cornell Wood Products Co.	3	1951-61	1,250,000	
Cornell Wood Products Co.	2	1947-51	500,000	
Crown Zellerbach Corp.	1⅞	1950-57	20,000,000	
Total Debt				$49,250,000

Preferred Stocks

	Rate, %	No. of Shares	Amount at Offer. Price	
Shellmar Products Corp.	4.75	40,000	$2,100,000	
Carpenter Paper Co.	4.00	5,000	525,000	
Hudson Pulp & Paper Corp.	5.00	100,000	2,500,000	
Scott Paper Co.	3.40	65,000	6,727,500	
Mead Corp.	4.25	24,889	2,538,678	
Mead Corp.	4.00	56,881	3,014,693	
Kimberly-Clark Corp.	4.00	70,000	7,105,000	
St. Regis Paper Co.	4.40	150,000	15,000,000	
Total Preferred Stocks				$39,510,871

Common Stocks

Shellmar Products Corp.	150,000	$3,600,000	
Carpenter Paper Co.	20,900	851,675	
Marathon Corp.	420,000	15,540,000	
Container Corp. of America	141,496	5,991,053	
Nekoosa-Edwards Paper Co.	63,000	1,585,250	
Total Common Stocks			$27,667,978
Total reported for 1946			$116,428,849

1945

Bonds and Other Long Term Debt

Company	Interest Rate, %	Maturity	Amount	Total

Preferred Stocks

Paper Industry Financing

Joseph A. McFadden, assistant vice-president of the Chemical Bank & Trust Co., New York City, has made available to *Paper Trade Journal* data on the financing by the pulp, paper and paper products industry during the past several years of plant expansion, plant rehabilitation and refunding of outstanding obligations.

The figures as developed were presented in the form of an inter-office memorandum for the bank's executive personnel.

The findings are summarized in Table I.

"The difficulty of raising capital in the equity market in recent years is the most pointed observation from the figures in Table I," Mr. McFadden points out. "However, we should not conclude that the capital structures of the large units in the industry have become top-heavy with debt, as this is not the case," he adds.

"The conservative dividend policy followed by the industry (a survey by the American Paper & Pulp Ass'n., indicates that in 1947, about 70 percent of net profit was retained in the business as an insurance factor for the benefit of all those dependent upon the continuity of the business) has resulted in a marked strengthening in the composite balance sheets of twelve larger publicly-owned units in the industry as is reflected (in millions) in Table II," Mr. McFadden continues.

"The sound captial position of the industry is evident in the 1947 figures, Table II, with Cash about 75 percent of current liabilities, and Funded Debt approximately 20 percent of Net Plant and only 13 percent of the combined capital consisting of Funded Debt, Preferred Stock, Common Stock and Surplus. Table I on the amount of financing includes a larger number of companies and therefore cannot be compared directly with the composite balance sheet figures on the 12 large companies (Table II).

Table III is a schedule listing the individual companies whose financing is included in the above annual totals."

Mr. McFadden, who is specializing in the paper industry for the Chemical Bank & Trust Co., is located at the bank's 46th Street and Madison Avenue office. He has been with the bank since his graduation from the Wharton School of Finance at the University of Pennsylvania in 1929.

Bonds and Other Long Term Debt

Company	Interest Rate, %	Maturity	Amount	Total
Rayonier, Inc.	2½ & 3¼	1946-60	$9,000,000	
American Box Board Co.	4½	1965	1,280,000	
Mead Corp.	3⅛	1960	8,000,000	
Champion Paper & Fibre Co.	3	1965	13,000,000	
Glatfelter (P. H.) Co.	3⅛	1960	1,000,000	
Union Bag & Paper Corp.	2¾	1955	10,000,000	
St. Regis Paper Co.	3	1965	15,000,000	
Kimberly-Clark Corp.	1½	1948-57	10,000,000	
Kimberly-Clark Corp.	2⅝	1958-65	10,000,000	
International Paper Co.	2	1955	22,650,000	
Warren (S. D.) Co.	3¼	1965	2,500,000	
Hammermill Paper Co.	3	1965	5,000,000	
Southern Advance Bag & Paper Co.	3.20	1953-60	2,045,000	
Southern Advance Bag & Paper Co.	2.45	1946-50	1,955,000	
Total Debt				$111,430,000

Preferred Stocks

	Rate, %	No. of Shares	Amount at Offer. Price
Hinde & Dauch Paper Co.	4.00	5,294	$555,870
Champion Paper & Fibre Co.	4.50	3,417	358,785
National Container Corp. of America	4.75	100,000	2,600,000
Hummermill Paper Co.	4.25	15,000	1,545,000
Southern Advance Bag & Paper Corp.	4.50	17,798	1,824,295
Warren (S. D.) Co.	4.50	30,000	3,045,000
Total Preferred Stocks			$9,928,950

Common Stocks

NONE

Total reported for 1945 ..... $121,358,950

GERALD L. WILSTEAD, *Investment Analysis Dept., Chemical Bank & Trust Co.*

TABLE I

Summary of Important Financing
U. S. Pulp, Paper and Paper Products Industries
(Data from available public information)
(In Thousands)

	Bonds and Other Long Term Debt	Preferred Stock	Common Stock	Total
1945	$111,430	$9,928	.....	$121,358
1946	49,250	39,511	$27,668	116,429
1947	40,700	10,780	8,678	60,158
1948 (6 months)	27,200	.....	500	27,700
Total	$228,580	$60,219	$36,846	$325,645

The heavy emphasis on debt as a source of capital is indicated by a percentage breakdown of the above totals:

Bonds and Other Long Term Debt	70.2
Preferred Stock	18.5
Common Stock	11.3
	100.0%

TABLE II

Composite Balance Sheets
Twelve Large Publicity-Owned Units in the Industry

	December 31 1937	1947
Current Assets	$150.2	$399.1#
Net Plant	464.3	570.3
Other Assets	81.2	112.2
Total Assets	$695.7	$1,081.6
Current Liabilities	$52.7	$115.7
Miscellaneous Liabilities	2.9	54.8*
Funded Debt	184.1	116.8
Preferred Stock	197.7	167.4
Common Stock and Surplus	258.3	626.9
Total	$695.7	$1,081.6
Net Current Assets	$97.5	$283.4

#—Includes $86,500,000 Cash.
* —Includes $31,700,000 Contingency Reserves.

Pulp Mill for Alaska

WASHINGTON — Acceptance by the Forest Service of a bid for a billion and one-half cubic feet of timber in the Ketchikan pulptimber unit of Tongass National Forest in southeast Alaska by the Ketchikan Pulp & Paper Co., an affiliate of the Puget Sound Pulp & Timber Co., of Bellingham, Wash., was disclosed on August 2 by C. M. Granger, acting chief forester.

The bid contemplates establishment of a 20- to 30-million-dollar pulp mill, with an ultimate capacity of around 500 tons, at Ward's Cove, six miles north of the city of Ketchikan, where the company owns a mill site.

The sale is the fruition of 30 years of effort on the part of the Forest Service to bring the pulp and paper industry to Alaska. A comparable sale and development was on the point of completion when it was blocked by the depression of the early '30s.

Sale of the Ketchikan pulptimber was originally advertised in September, 1947, with bidding scheduled for the following December. Subsequently, the bidding date was postponed until April 14, 1948, but no bids were received. With terms substantially the same as those originally proposed, the timber was re-advertised by the Forest Service June 18, this year, and parties wishing to submit offers were required to qualify by July 19. At that time, the Ketchikan company was the only qualifier.

The bid was made on the basis of a 50-year cutting contract expiring June 30, 2002 A.D., and the company agreed to pay 85 cents per 100 cubic feet for timber cut for manufacture of pulp prior and up to July 1, 1962. For trees intended for manufacture or sale in other forms than pulp or pulp products, such as veneer logs or sawlogs cut in the same period, it agreed to pay $3 per thousand board feet for spruce sawlogs, $1.50 per thousand for cedar, and $2 per thousand for sawlogs of hemlock and other species. After July 1, 1962, and at subsequent five-year intervals, these rates, as provided by the contract, will be reappraised by the Forest Service.

Under the terms of the bid contract, the Ketchikan company tendered the acting chief forester a certified check for $25,000 payable to the Treasurer of the United States, and on or before August 9 must pay $75,000 more as an additional guarantee of qualification for final award and execution of the sales agreement within specified time limits.

Within one year the company must show adequate financial resources to construct the mill and must qualify for a water-power license from the Federal Power Commission. While the contract calls for a plant capable of producing 150 tons of pulp per day within three years, and 300 tons per day within five years, and provides sufficient timber for an ultimate production of 525 tons per day, it is understood that because of the pulp and paper shortage the company is considering constructing a mill of around 500 tons per day capacity at the start of its operations. It is expected that the company will employ about 1,200 workers.

Bulk of the timber covered in the bid is on Prince of Wales Island north of Hydaburg, Craig, and Klawock. It is 75 percent hemlock, the balance being mainly Sitka spruce with small amounts of Alaska and western cedar. The operable stand per acre is between 20,000 and 25,000 board feet or 3,600 and 4,500 cubic feet.

Stipulated in the contract are handling of the timber on a sustained-yield basis, safeguarding of salmon spawning streams, preservation of scenic areas, and prevention of stream pollution.

The principal officers of the Ketchikan Pulp & Paper Co. are all connected with the Puget Sound Pulp & Paper Co. They are: Fred H. Stevenot, of San Francisco, chairman of the board; Lawson P. Turcote, of Bellingham, Wash., president; and Robert H. Evans, of Seattle, vice-president.

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Fir Tree Club Founder Invites Inquiries

DETROIT — M. W. Myers, organizer of the Fir Tree Club, Western Group, who hails from the Pacific Northwest, is endeavoring to gather around him others who have originated from that part of the United States and Canada.

Objective of the club is to promote fuller appreciation of the Northwest with its evergreen playground. Mr. Myers is eager to have persons from the Pacific Northwest visiting Detroit contact him at P. O. Box 425, Detroit 31.

Starting as a single-handed effort, the Fir Tree Club is now widely known throughout Alaska, British Columbia, Washington, Oregon, Idaho and the western sections of Montana. It has been a source of information about the Pacific Northwest to persons from other parts of the United States.

NAM Patent Seminars

NEW YORK — The Patents and Research Committee of the National Ass'n. of Manufacturers has organized a series of area seminars to dramatize the patent system's contribution to the nation's abundance.

The first of these seminars was held recently in Cleveland. Others will be announced soon.

Members of the NAM committee find that many manufacturers share public apathy to attacks on the patent system. By driving home what patents have done and are doing to enrich life in America, it is hoped to make the public realize the important stake it has in the protection of the patent system.

Mando Reveals Sales Changes

TORONTO, Ontario — Expansion and changes in the sales organization of the insulite division of the Minnesota & Ontario Paper Co. are disclosed by M. C. Fairfield, division sales manager.

Leo C. Monahan, assistant sales manager supervising eastern field operations, has been transferred to Minneapolis to assist the insulite sales manager in an administrative capacity. He is succeeded by H. M. Williams, territory representative in Upper New York State. C. H. Tiger, who previously serviced insulite's Northern New Jersey territory, has been named to take over the territory vacated by Mr. Williams.

Marinette Safety Conference

MARINETTE, Wis. — A one-day Lake Shore and Fox River safety conference will be held here September 23. About 700 persons are expected to attend. Chairmen of committees include Norma Bornfield, Marinette Paper Company, industrial nurses and public health; paper and pulp section, Einar Martenson, Marinette Paper Company, and Howard Aderhold, Marathon Corporation; tickets and publicity, Howard Witt, Marinette Paper Company.

Ahdawagam-Consolidated Merger Planned

WISCONSIN RAPIDS, Wis.—Meetings will be held here on August 25 by Ahdawagam Paper Products Co. and Consolidated Water Power & Paper Co. stockholders to decide whether Ahdawagam will become a part of Consolidated.

In connection with the merger plan, it is proposed to increase Consolidated's capital stock from 400,000 shares to 640,000 shares of $25 par. Ahdawagam's stockholders would receive 1½ shares of Consolidated stock for each share held.

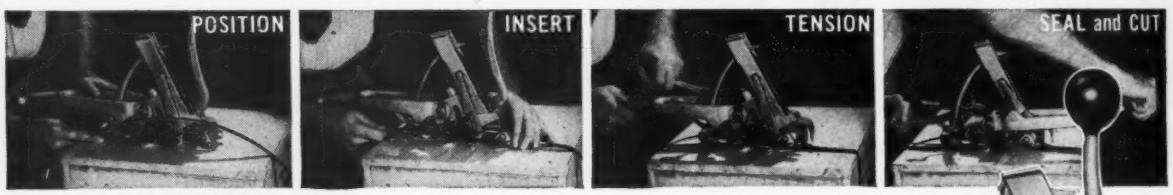
Karle Corp. Auction

CHICAGO — The Karle Corp., 4532 South Kolan avenue, was sold at auction, July 27 as a result of bankruptcy proceedings against the firm. Paper box men observed that the machinery and equipment sold at a notably low price.

The firm built the plant during the early war-days at an estimated cost of $300,000. Reliable sources state that it was recently sold for $325,000 to undisclosed purchasers.

Hammermill Agents to Meet

ERIE, Pa.—The Thirty-fifth Conference of Hammermill Agents, will be held here August 25-27. Business sessions will be held at the Kahkwa Club.



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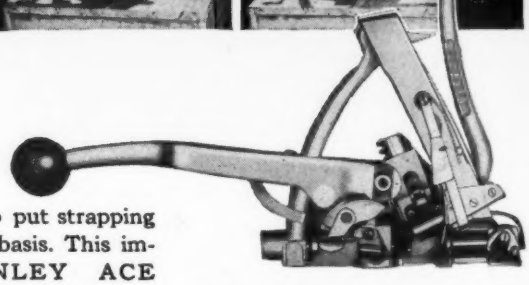

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OBITUARY

Albert H. Seyler

Albert H. Seyler, 66, president of the Cleveland Paper Co., Cleveland, Ohio, died in Lakeside Hospital, following a cerebral hemorrhage suffered while having luncheon the previous day at the Shaker Country Club. Mr. Seyler was the founder and past president of the Cleveland Sales Executive Club, and has served as a director and on numerous committees of the National Paper Trade Assn. He was a member of the Cleveland Athletic Club, the Cleveland Chamber of Commerce, Cleveland Sales Executive Club, the Cleveland Advertising Club and Mayfield Country Club. He was a 32nd Degree Mason, and a lifetime member of Syria Temple A.A.O.N.M.S. of Pittsburgh, a Knight Templar, and lifetime member of Scottish Rite Valley of Pittsburgh. Surviving are his widow, Mrs. Charlie Seyler and four sons, Alan, Fred, Albert, Jr., and Arthur.

Nathan Gumbin

Nathan Gumbin, 56, part owner and president of the General Fibre Co., Chicago, was slain the evening of July 28. While driving on the Southwest side accompanied by his son, Owen, he halted for a stoplight. A car pulled alongside and one of the occupants fired a shotgun blast. Mr. Gumbin fell, mortally wounded as his assailant's car sped away. The son was not injured.

Together with his brother, Herman Gumbin, of Grand Rapids, Mich., the slain man was co-owner of the Rockford Paper Mills in Rockford, Mich. Their father was organizer some 20 years ago of the Eddy Paper Co., Three Rivers, Mich.

Gordon Randolph (Pat) Kelley

Gordon Randolph (Pat) Kelley, 62, president and founder of the Kelley Paper Co., Winston-Salem, N. C., coarse paper merchant firm, died at his home on July 20, following an illness of three months. Mr. Kelley was a Lion, an Elk, and a member of the Forsyth Country Club and the Twin City Club. Surviving Mr. Kelley are two sons: Gordon R. Kelley, Jr., and John H. Kelley, and a daughter, Miss Mary Joe Kelley, all of Winston-Salem.

George W. Dolan

George W. Dolan, 46, chairman of the board of the Mathieson Chemical Corporation (formerly The Mathieson Alkali Works), New York City, died on July 24 after a brief illness. Born in Cleveland, Ohio, Mr. Dolan graduated from Western Reserve University in 1928. He joined Mathieson as a salesman in 1930. Surviving him are his widow, the former Miss Adele T. Corcoran, and a son, George E. Dolan.

John Woods Parker

John Woods Parker, 76, reputed to have introduced the Mother's Day greeting card, died at his home in Massapequa, L.I., N.Y., on July 29. Mr. Parker was associated with Lutz & Sheinkman, New York City, publisher of Parker greeting cards. Surviving him are two sisters: Miss Katherine Parker of Ft. Worth, Texas, and Mrs. Pauline Francois of Massapequa.

James F. Dougherty

James F. Dougherty, traffic manager of the Michigan Paper Mills Traffic Ass'n., died on July 21. Funeral services for Mr. Dougherty were held at Otsego, Mich., on July 24.

Foxboro Company Enlarges San Francisco Quarters

SAN FRANCISCO — Having acquired the remaining space in the building which it occupies, at 266 Fremont Street, the local branch of the Foxboro Co. of Foxboro, Mass., is now in its rearranged quarters. The company makes industrial instruments for measurement and control of process variables such as temperature, pressure, humidity and flow.

Harry B. Brooks is manager of the Pacific District, with supervision over Foxboro branches west of the Rockies.

Morehouse Making Coast Trip

HARRISON, N.J.—A six week trip to the West Coast, starting the middle of August is planned by Walter B. Morehouse, paper chemicals division manager of the NOPCO Chemical Co.

On the Coast, Mr. Morehouse will be joined by Joseph E. Connell and together they will visit northern California, Oregon and Washington industrial processing plants.

Opens New Orleans Office

GRAND RAPIDS—William W. St. Cyr has been appointed a sales representative of The Rapids-Standard Company, Inc., material handling equipment manufacturer in Louisiana and Mississippi.

Mr. St. Cyr has established offices at 1415 Carondelet building in New Orleans.

Clark Succeeds Douglas

NEW YORK — Henry B. Clark has been named manager of the local sales office of the Diamond Alkali Co., succeeding Charles V. Douglas, whose resignation becomes effective August 15. Charles L. Flaccus, Jr., has been named assistant branch manager.

Goodrich Ups Two

AKRON, Ohio—George J. Fischer has been named manager of national accounts of the Industrial Products Sales division of the B. F. Goodrich Co. James M. Flounders succeeds Mr. Fischer as product manager.

Election Set Aside

WASHINGTON—The National Labor Relations Board on July 27 set aside an election in which employes at the Richmond, Va., plant of the Hinde & Dauch Paper Co., Sandusky, Ohio, voted against the union as its representation for bargaining.

Grounds for the NLRB action, that agency said, were its findings that the company had engaged in unlawful anti-union activities in the two weeks preceding the election. The complaining union was United Paperworkers, C.I.O.

Dr. Nadelman Heads Curriculum

KALAMAZOO, Mich. — Dr. Alfred H. Nadelman has been appointed head of the new Pulp and Paper Technology curriculum which will be inaugurated at Western Michigan College in Kalamazoo with the opening of the fall semester.

Ralph A. Sheals Appointed

WASHINGTON—The Department of Agriculture on July 28 announced the appointment of Ralph A. Sheals as assistant to Dr. W. L. Popham, assistant chief, Bureau of Entomology and Plant Quarantine, in Charge of Control Operations.

Lowney In New Post

BOSTON—Paul W. Lowney, formerly of the Pratt Paper Co., has joined Munro & Church Co., dealer in paper board, 10 High street, as a salesman.

Bemis Gets Gallie-King

HOUSTON, Tex.—The land, buildings and equipment owned by the Gallie-King Bag Co., Houston, Texas, have been purchased by the Bemis Bro. Bag Co., which took possession of the property effective July 28. Orders presently on the books of the Gallie-King Co., will be delivered by that company.

Bemis will use the property as an addition to its local facilities.

K-C Assessment Protested

NIAGARA, Wis. — Kimberly-Clark Corp. has protested assessed valuation of its property in this village at $5,235,000. Mill officials claim it is about $700,000 too high. The board of review adjourned its session to August 9, to permit further study and to try to arrive at an equitable figure.

Hill New Smith P. A.

LEE, Mass.—Emmett T. Hill, formerly in charge of the Smith Paper, Inc., plant at Red Lake Falls, Minn., has been named purchasing agent of the company. Paul G. Sullivan has assumed the position of assistant purchasing agent.

Nielsen Hallman Director

NEW YORK — Gerald B. Nielsen has been elected a director of Hallman, Inc., the American subsidiary of the Hallman Pulp & Plywood Mills of Finland.

Alcor Sales Camp

ROCHESTER, N. Y.—The Alling & Cory Co. recently held a three-day general sales meeting of all divisions of the corporation at Camp Lawrence Cory on Keuka Lake. The Sales Camp was attended by approximately 120 men from the nine cities in which the company has warehouses.

Finns Serve Argentina

BUENOS AIRES—Finland has agreed to ship 37,000 tons of paper to Argentina soon under terms of the recently-signed commercial treaty between the two countries, it was disclosed on July 25.

Sandusky Madix Manager

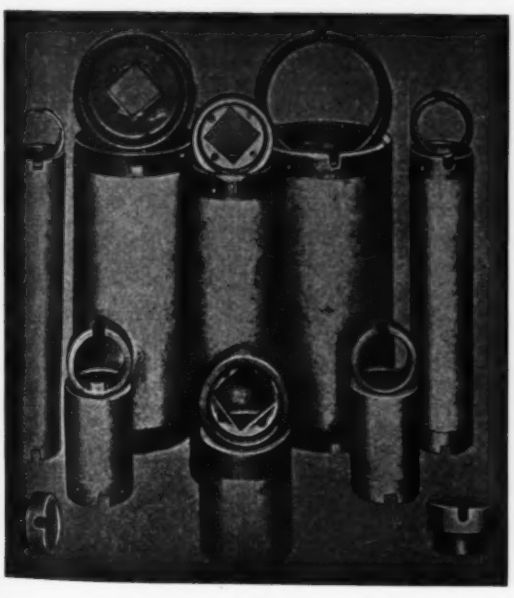
MOREHEAD CITY, N. C. — Otto A Sandusky was named manager of the Madix Asphalt Roofing Co. on August 1. Mr. Sandusky was previously superintendent of the Bonafide Felt Mills, Rossman, N. Y.

Appleton Employes Picnic

APPLETON, Wis. — Employes of the Appleton Coated Paper Company held their annual picnic August 1 at Pierce park. A softball game and various other contests for adults and children were features.

Boex Northern Exec. VP-GM

GREEN BAY, Wis. — Milan Boex has been elected executive vice-president and general manager of the Northern Paper Mills.



ELIXMAN

CAPS — Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

CORES

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

CORINTH, N. Y.

NEW ARMSTRONG *Individual Dryer* TEMPERATURE CONTROL

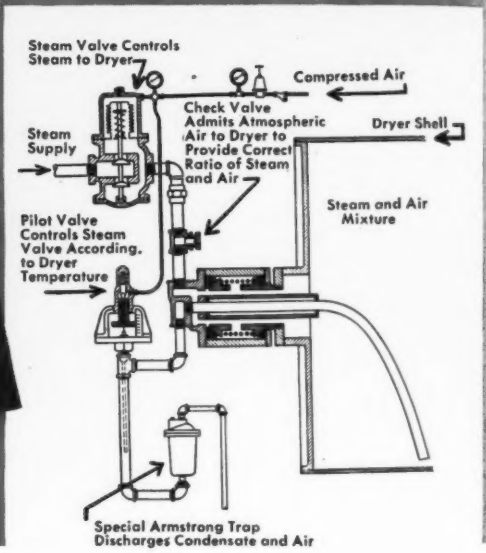
Keeps Wet End Dryers "Cool"

Prevents Sheet from Sticking and Curling

Controls Each Dryer Independently

Maintains Any Temperature from 100° to 250° F

Positive—Dependable—Guaranteed

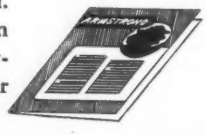

Steam Valve Controls Steam to Dryer
Compressed Air
Check Valve Admits Atmospheric Air to Dryer to Provide Correct Ratio of Steam and Air
Dryer Shell
Steam Supply
Steam and Air Mixture
Pilot Valve Controls Steam Valve According to Dryer Temperature
Special Armstrong Trap Discharges Condensate and Air

Armstrong Individual Dryer Temperature Controls on the wet end of a paper machine make it possible to increase the sheet temperature as slowly as required for good drying. The temperature of the first dryer can be set at say 140° F, and that of the succeeding dryers at 160°, 180°, 200°, and 220° or whatever setting may be required for drying a particular sheet.

Thus, we have a positive, dependable answer to an old drying problem: maintenance of relatively cool wet-end dryers to prevent the sheet from sticking to the dryer surface, and to avoid curl or cockle due to over-drying on one side.

These controls are also used after the size press. Not only are the non-picking, non-curling advantages secured, but here fairly constant control of moisture content is also secured.

For complete information on this proved method of improving paper drying, write for BULLETIN 187.



Reduced Temperatures Secured by Controlled Mixture of Steam and Air

When steam and air are mixed at atmospheric pressure, the temperature of the mixture will be that corresponding to the partial pressure due to the steam. For example, if the partial pressure of the mixture due to steam is 3.7 lbs. absolute, the temperature will be 150° F. The Armstrong Control diagrammed above automatically controls the ratio of steam and air to maintain accurately the temperature for which it is set. If the temperature of the dryer tends to rise, the pilot valve bleeds compressed air to release pressure on the steam valve bellows, causing it to throttle. A decrease in temperature causes a reverse action. Atmospheric air for the mixture enters through the check valve when the condensing rate of the dryer causes pressure to drop below atmospheric. When temperatures above 212° F are desired, the check valve stays closed, no air enters and steam pressure is raised to the required point.

ARMSTRONG MACHINE WORKS

818 Hoffman Street, Three Rivers, Michigan

INVERTED BUCKET STEAM TRAPS • PAPER MILL SPECIALTIES

Latex Compounds for the Paper Industry

By E. G. Partridge, Research Director, American Anode Co., Akron, Ohio

Latex Background

Latex is a water suspension of microscopic particles of rubber or rubber-like material. Latices are of two types, elastic and plastic. The first includes crude rubber and the synthetic rubber latices; such as, GR-S (the general purpose synthetic rubber for tires and other articles), Hycar and neoprene (specialty rubbers, particularly for chemical and oil resistant uses). Solid deposits from these are rubbery in properties in that they are resilient, can be stretched to a number of times their original length and when released return rapidly to approximately their original dimensions. The plastic latices, on the other hand, when dried or deposited, yield solid materials which compared with rubber are harder, much less resilient, can be stretched less and do not return as well to their original dimensions. Some of the more familiar plastics, such as the vinyl resins, are available in latex form. Some of these latices yield powders when dried, unless especially compounded or heated to form continuous films.

Crude rubber latex is the milk or sap of tree rubber from which the crude rubber commonly used in manufacture of rubber articles is obtained. However, the liquid latex itself may be used directly in making articles instead of first converting it to solid rubber. The latex is obtained by tapping or cutting the bark of the rubber tree and allowing the latex to run into a cup. A native in the Far East, where most of the rubber is obtained, can collect one-half ounce to two ounces of rubber from each of about two hundred trees in a day. The annual yield per acre is about four hundred to eight hundred pounds. In collecting latex for use in the liquid form, special precautions must be taken to avoid introduction of foreign materials and to prevent solidifying or drying out of the latex. To prevent solidifying and putrefaction, ammonia is added in the collection cup or to the latex after collection. To insure uniformity, the latex is bulked in large tanks holding thousands of gallons. Most of the latex brought to this country is in concentrated form.

The original latex as it comes from the tree with a rubber content of about 35—40 per cent is concentrated to about 60 per cent by one of several methods. Here is a sample of latex concentrated by centrifuging. As you can see, if you examine the sample, it looks about like ordinary coffee cream but if allowed to dry, it deposits a film of rubber. It is interesting to note that the rubber particles in this latex average about 4/100,000 of an inch in diameter or 25,000 particles could be placed side by side in the space of one inch. Another way of giving you an idea of the minuteness of the particles is to tell you that a single drop of this latex is estimated to contain over 10,000,000 particles of rubber.

After bulking and concentration, the latex is shipped usually in tankers to the U. S. Here it is pumped into storage tanks from which it is shipped to compounders or processors in insulated tank cars.

Synthetic rubber and plastic latices are made in chemical plants where monomers, in the presence of other necessary chemicals, are polymerized to latices resembling crude rubber latex. The particle sizes of these latices are in general even smaller than those of crude rubber latex. I have here samples of several of these latices.

For most uses, it is necessary to compound these latices by the addition of other materials to give particular properties. For example, with crude rubber latex it is usually necessary to incorporate materials such as sulphur and accelerators to make it possible to vulcanize the rubber, anti-oxidants to make the articles age well and other materials such as colors or softeners to give special properties. Such materials cannot be added directly but must be brought into liquid form in water by dispersing solid materials or emulsifying liquids. In order to make compounds from which ingredients do not settle rapidly, it is necessary to reduce the particles of these materials to about the same size as the latex particles. I have here some samples of such dispersions and emulsions. Dispersions such as these are made in several types of equipment including ball mills and colloid mills.

The various latices require, in general, different types of compounding ingredients and in different amounts. After the proper recipe has been developed for the particular purpose for which it is to be used, compounding is done by mixing the correct amounts of the water dispersed ingredients into the latex with gentle agitation.

Advantages of Latices

In making rubber or synthetic rubber articles by a variety of methods, latex compounds have several advantages over solid rubber. Less power is required.

Presented at a recent meeting of the Chicago section of TAPPI.

INDUSTRIAL DEVELOPMENT

Paper Trade Journal, in this new section, proposes to make space available for discussion of administration and operational problems of the pulp and paper industry, as well as for the presentation of independent studies and research on technical and engineering subjects. Noteworthy features of paper mills, converting plants, associated industries and institutions also will be presented, as they become available. These papers will be open to all who are qualified to discuss subjects within these limits. Manuscripts, submitted for approval, will be welcomed.—E. P. McGINN, Industrial Editor.

Articles of better quality and often of better appearance can be made. Many articles too complicated to be made by molding solid rubber can be manufactured from latex. As compared with production of dipped goods or spread goods from solvent systems such as rubber cements, production from latex compounds has the advantage of elimination of fire and toxic hazards and expense of solvents. Also, because latices can be obtained in concentrated form, thicker films can be deposited than from cements.

Latex Compounds in Paper

While the original articles from rubber, crude raincoats and shoes, were made directly from latex by South American Indians by waterproofing fabric with the liquid, the manufacture of articles from solid rubber was later developed and the use of liquid latex was abandoned. In the last quarter century, the manufacture of articles directly from latex has become important. Considerable interest has been aroused, particularly in very recent years, in the use of natural and synthetic latices in paper.

Methods of Application

Treatment of paper with latex or latex compounds may be carried out in a number of ways. First, the latex compound may be added to the paper pulp at some stage in the process of making paper such as the beater or head box. Addition to the beater has advantages as at this point latex can be uniformly distributed through the pulp in the regular beater process without extra processing steps.. Difficulties have been encountered with beater addition due to excessive foaming, formation of lumps and accumulation of rubber on the beater and other equipment. These difficulties are not present to the same extent with synthetics and beater application of synthetic latex is being carried out commercially. Addition at the head box is also successfully done with synthetics. There is less tendency to foam by this procedure but mixing is not as thorough. It should be emphasized that there are important differences between natural latex and synthetics in regard to stability of emulsion when added to pulp in beaters. Therefore consideration should be given to this method, with properly compounded synthetics, in spite of prejudices based on earlier sad experiences with natural rubber latex.

Another method of addition is saturation or impregnation of paper in the wet or dry state. This method is widely and successfully used. It is not applicable to all types of paper, however. It is necessary to use saturating papers having sufficiently porous structures to allow the latex to penetrate the paper. It should be pointed out that it is very important to pick paper of the right properties for the specific use, bearing in mind not only the finished properties of the paper itself but also how well it can be saturated with latex and the properties of the combination. The latex compound must also be prepared with the specific properties desired in mind so that for each use it is necessary to select carefully both the proper paper and the proper latex compound to give the finished characteristics desired.

Impregnation or saturation may be accomplished by floating and immersing the paper in latex. The latex may also be applied by rolls, spray or brushes and the excess removed by squeeze rolls, doctor blade or air knife. Latex compounds may be applied to paper by coating techniques. Coating may be done on untreated paper or paper which has been saturated. Although the two processes overlap considerably, saturation of paper is used mainly to impart internal physical properties to the paper such as tensile strength, tear resistance, elongation or wet strength. On the other hand coatings are used to get surface properties such as grease resistance, attractive appearance, resistance to abrasion.

Various Latex Compositions

In selecting a latex compound for treatment of paper for a given purpose, there are available a variety of types of latices with widely differing properties from which to choose. While for some purposes many of these latices may be used without modification, it is often desirable to compound them by the addition of selected ingredients to impart specific properties to the finished paper.

Among properties often desired for specific uses are: Increased tensile, bursting strength, tear resistance, elongation, wet strength, fold resistance, water, grease or solvent resistance, improved appearance or feel, low moisture vapor transmission, good retention of properties on aging, increased stiffness or increased flexibility.

While it is unwise to generalize on this subject since paper, treating material and processing contribute to the properties, some results obtained in our laboratory will illustrate differences between different types of latex compounds as saturants:

Natural Rubber Latex

Natural rubber latex gives improvement in tear and flexibility and is helpful in combination to improve tear and flexibility of some synthetics. Disadvantages are tackiness and pressure sensitivity causing sticking to squeeze rolls. Addition of soaps or some other surface active materials to the latex help to overcome this. As pointed out above, considerable difficulty has been encountered in beater application of natural rubber latex. On the other hand, the tackiness and pressure sensitivity make natural rubber latex particularly useful for some adhesive applications.

GR-S Latex

GR-S latex increases tensile strength and tear resistance somewhat and, with reinforcing materials, increases tensile further but at the expense of tear resistance and flexibility.

As with other latices, per cent improvement is greater the less the original strength of the saturating paper.

Hycar Latex

Hycar OR-25 gives high elongation and flexibility along with increase in tensile strength and tear resistance. With plasticizers, still higher tear resistance and elongation and better flexibility can be attained. There is somewhat less tendency for papers saturated with this material to stiffen than those impregnated with GR-S or neoprene latex.

This latex is particularly good in saturating properties due, at least in part, to its small particle size. It is especially responsive to compounding so that properties of treated papers can be altered considerably as desired. This latex gives good chemical and grease resistant properties.

A recently developed latex, Hycar PA, has particularly outstanding heat resistant properties and excellent light stability. It promises to be very useful in heat and light resistant papers.

Neoprene

Neoprene 700 gives high tensile, good tear and good Mullen value. It gives somewhat lower flexibility and elongation than GR-S or Hycar.

A neoprene latex has recently been developed in which the particles, unlike other latices, are positively charged. This shows promise of having advantages in paper treatment particularly in addition to pulp.

Plastic Latices

Since, in general, it is desirable to have saturated papers flexible, plastic type latices are not usually used as saturants. However, in special uses requiring stiffened papers, they may be useful.

Coatings

The rubbery or elastic latices described previously as saturants may also be used as coating materials. For such purposes it is often desirable to compound them differently to obtain higher viscosity compositions suitable for spreading operations.

The plastic latices, which are not as generally useful for saturation or impregnation, are particularly suited for coating applications. These latices give rather hard but flexible, tough, glossy films resistant to many chemicals, grease, moisture and abrasion. When papers are coated with plastic latices, these properties are imparted to the surface of the paper. Properties may be greatly modified by incorporation of compounding ingredients. As in the case of saturated paper, the final properties are influenced by the base latex, the ingredients added, the properties of the base paper, the methods of application and heat treatment and other factors so that comparisons are not accurate. However, some idea of properties obtainable from various plastic latices may be gained from the following information based on laboratory results.

Among the more important of the plastic type latices are Geon latices, Saran latices and polyvinyl butyral dispersion. Papers coated with compounds of these materials in general have glossy appearance, good tear resistance, abrasion resistance, flexibility, moisture resistance, chemical and grease resistance.

Saran Latex

Saran Latex is very good in imparting resistance to moisture vapor transmission. It needs little plasticizer content to give flexibility and consequently is especially good in chemical resistance. The lots of this type of latex with which we have worked have been less stable chemically than Geons and tended to coagulate in a relatively short time. They are corrosive to steel equipment and papers coated with them tend to darken on light exposure. They are heat sealable at relatively low temperature.

Geon 11X

This latex gives good all around properties. It requires considerable plasticizer to give flexibility and requires heat treatment of the coating to give maximum properties. A tendency toward surface tack can be overcome by suitable compounding. The latex is quite stable in glass or wood containers but is somewhat corrosive to steel though less so than Saran.

Geon 31X

This latex gives a coating which is flexible without the use of a plasticizer. It has outstanding resistance to grease and to moisture vapor transmission. It is easy to process and develops maximum properties at room temperature. It gives good heat sealing.

Geon Polyblends

These have the properties of a Geon plasticized with Hycar which acts as a non-extractable plasticizer. By varying composition of the polyblend, a range of properties from those of plastic to elastic latices can be achieved. Properties including moisture vapor transmission and resistance to ultraviolet are intermediate between Geon and Hycar.

Polyvinyl Butyral Dispersion

This material gives excellent all around properties and is particularly good in color and transparency retained on ultraviolet exposure. Its main disadvantage is high cost.

Effects of Compounding Ingredients

It is evident from what has been said that it is necessary to select carefully both the paper to be used and the type of latex to give the desired properties for any specific use whether saturation or coating is to be employed as the method of application. Since the properties of the latex may be altered by compounding, it is also important to compound with the proper ingredients in the best proportions to give the specific properties desired both in processing and in the finished paper. Though specific properties are attained by special compounding, general effects of certain common types of ingredients may be mentioned. It should be noted that patents exist in the field of compounding which should be given consideration when starting such operations.

Plasticizers

The addition of plasticizers usually increases tear resistance, elongation and flexibility while decreasing tensile strength and chemical resistance. Conventional chemical plasticizers or certain rubbery latices may be used as plasticizers.

Reinforcing Agents

Reinforcing or fortifying agents such as some resin emulsions increase tensile and stiffness while usually decreasing tear and elongation.

Age Resistors

Age resistors are not alike in their effect and also differ in their action on treated paper as compared with latex films. They have a marked influence on physical properties of treated papers on aging and also on color change on aging particularly in light.

Stabilizers

For most uses of latices in paper, it is necessary to add stabilizers to prevent coagulation or formation of lumps.

Other Materials

In addition to the above, it is often necessary or desirable to add other material to give specific properties such as wetting agents, colors, vulcanizing ingredients and tackifiers.

Commercial Applications

Some commercial applications for latex in the paper industry are as follows: (1) Paper drapes, table cloths, towels; (2) Masking tape-pressure sensitive adhesives; (3) Paper tape and twine; (4) Decorative coatings;

(5) Service papers for greaseproofness, solvent resistance; low moisture vapor transmission; (6) Strippable coatings for temporary protection; (7) Abrasion resistant finishes; (8) Artificial leather; (9) Heat sealable coatings; (10) Waterproof adhesives; (11) Coating binder for wall paper, matrix board; (12) Gaskets of various types; (13) Flock and Paper maché; (14) Anti-slip paper rug backing, and (15) Paper-backed foils.

I have samples of some of these commercial applications for your inspection. I also have a number of laboratory samples of treated papers illustrating some of the points which I have discussed. You may wish to look at these.

There is much development work to be done in solving problems in this field. Some of these are: (1) Discoloration and change of properties of treated papers on aging, especially in sunlight; (2) Insufficient stability of many latex compounds; (3) Difficulty of saturating relatively hard finished papers; and (4) Desirability of wider temperature ranges in which properties of treated papers are useful.

Acknowledgment

In preparing this paper, I have had valuable assistance from Messrs. K. M. Romick, A. F. Spoehr and R. T. Henson of American Anode Inc.

Paper Industry in Former German Territories Ceded to Poland After War

By Otto Goy

THIS ARTICLE is published here for its value in showing how the pulp and paper industry in Germany is meeting its postwar problems. It is not presented as a contribution to the advancement of the papermaking art.—Editor.

Until the present time it has been almost impossible to learn anything about the fate of the paper factories in the East-German territories, taken over by Poland. Recently the Polish news agency "West" announced a few figures. According to these the rehabilitation of the industry is only making slow progress. Of the 154 occupied plants, many of which were strongly damaged, only 44 had started to operate and 36 were in the process of being repaired by the end of 1946. The other 74 plants are apparently too greatly damaged to warrant rebuilding. They are to be taken down and whatever equipment is not too damaged will be used in the other plants.

The production quotas, in metric tons, for 1947 for the paper, board and chemical pulp industries are: 72,000 tons of paper, 18,500 tons of board and 10,200 tons of chemical pulp. Planned production for 1949 is: 85,000 tons of paper, 21,500 tons of board and 31,000 tons of chemical pulp. In 19 vocational schools, 3,350 specialists for the paper industry are being trained under the Polish three-year plan. At the present time, the plants taken over from Germany employ about 10,000 men of which 700 are still Germans, who also are expected to be replaced by Polish workers in a short time.

LITERATURE

Ajax Flexible Coupling Co., Inc., Westfield, N. Y. Catalog, "Ajax Flexible Couplings." Covers standard types S and A as well as shear pin, brake drum, bolt-on and detachable hub couplings. Provides data on forged steel and cast semi-steel construction, as well as capacity and dimension figures covering Ajax sizes.

Babcock & Wilcox Tube Co., 85 Liberty street, New York 6, N. Y. Bulletin, "B & W Croloys." Offers condensed information in chart form on such factors as creep strength, short-time tensile strength, oxidation and corrosion resistance, temper embrittlement and minimum physical properties. Designed as a convenient guide on high-temperature steels for alloy tubes and pipe. Shows some of the materials available for processing into tubes and pipe for meeting varied high-temperature requirements.

Bridgeport - Diamond Machine Co., 2362 Main street, Stratford, Conn. Catalog "Diamond Grinders." Describes and illustrates machine parts produced on these machine tools in paper mills, steel mills, and other industries.

Bristol Co., Waterbury 91, Conn. Bulletin, "Electronic Proportioning Pyrometer Controller." Describes application of the instrument in proportioning the current input to electrically-heated furnaces, ovens, plastic molding machines, salt pots and other similar equipment to provide practically straight-line control.

Clark Equipment Co., 258 Champion street, Battle Creek, Mich. Magazine, "Material Handling News," current issue. Presents a detailed description of its electric battery-powered fork trucks and their use in fields to which they are best suited.

Cooper Alloy Foundry Co., Hillside 5, N.J. Catalog, "Cooper Alloy Stainless Steel Valves, Fittings and Accessories." Sections on prices, dimensions, finished weights, accessories, etc. are tab-indexed for easy location.

Dresser Industries, Inc., 1130 Terminal Tower, Cleveland, 13, Ohio. Booklet, "Who We Are." Lists the 13 operating companies of the corporation and identifies the products and services of each.

Northern Equipment Co., Erie, Pa. Bulletin, "Boiler Feed Water Control at the Greenpoint Works of the Brooklyn Union Gas Company."

John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. Book, "An Introduction to Color," by Dr. Ralph M. Evans, Color Control Department Head of the Eastman Kodak Co. Treats the field of color in simplified terminology. Covers combined effects of the physical properties of light, vision, and action of the mind in interpreting color.

Worthington Pump & Machinery Corp., Harrison, N. J. Bulletin, "Push Up Efficiency % and Pull Down Expense with Worthington Cup Type Piston Packing."

Worthington Pump & Machinery Corp., Harrison, N. J. Booklet, "Multi-Stage Steam Turbines, Type S," also booklet, "Centrifugal Pumps, Types CN-CNE."

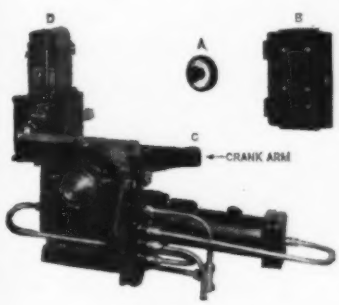
Yale & Towne Mfg. Co., Philadelphia Div., 4530 Tacony Avenue, Philadelphia, Pa. Bulletin, "Handlift and Worksaver Pallet Trucks." Describes pallet-system applications, hand-lift and Worksaver pallet truck models, and recommended pallet design. Recommends correct trucks for use with double-face and single-face pallets, and gives capacities, lift frame specifications, ground clearance and structural data for the various models.

EQUIPMENT AND SUPPLIES

Electronic Remote Control

Electronic Remote Control units are designed to permit positioning with laboratory accuracy of hydraulic cylinders and other heavy mechanisms with power output to 7,500 pounds from points 1,000 feet or more away.

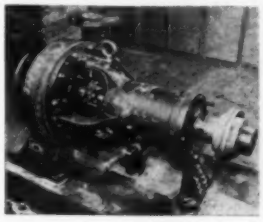
Standard control units are combined to produce the system with which a



small electric signal is translated into the "position of a hydraulic cylinder." The system illustrated consists of a two-station control: (A) Station—Remote Transmitter; (B) Station — Transmitter and Amplifier; (C) Hydraulic Crank Type Cylinder; (D) Receiver Mounted on Cylinder. Position of cylinder crank arm can be selected at either Station A or B. An electric signal of the position seelcted is transmitted to the Receiver Motor (D) which operates a pilot valve positioning the crank arm at any point within its 90 degree arc. Output position can be selected manually or, with minor modification of the system illustrated, selected automatically from signals developed by plant processes or other changing operating conditions. For details and prices write to Askania Regulator Co., 240 East Ontario street, Chicago 11, Ill.

BJ Pulp Pump

The BJ Pulp Pump is designed to handle pulp stock or acid and liquor service in capacities from 400 to 4,000 gpm, in heads from 40 to 200 feet. Available in seven standard pump sizes from three inches to 12 inches. Normal stock consistency ranges to six percent. Can handle to eight percent with the screw feed pump. The units are single-stage, single suction, centrifugal pumps with double-row radial and thrust bearing design. Extra large impeller eyes are provided to keep entrance velocities low. Conversion from pulp stock service to acid and liquor service, or vice versa, is accomplished by changing two or four pump parts. For hot service, the standard stuffingbox can be replaced with a water-jacketed one by means of a simple machining operation on the pump cover. Large bracket windows permit stuffingbox accessibility so that dismantling is simplified. Entire bracket, rotating element and pump cover can be unbolted and lifted free from the case without disturbing the



suction and discharge piping, it is stated. The pump illustrated is designed to handle 3½" bone-dry white groundwood stock at 1,000 gpm against a 45-foot head. For details and prices write to Byron-Jackson Co., Pump Div., Slauson avenue at Thomas, Los Angeles, Calif.

Wheeler Calender Roll

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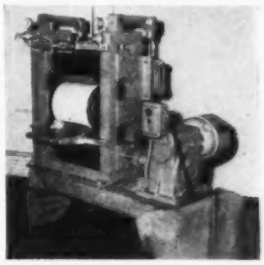

rolls for steam heating to exact temperatures; guarded sheet feed to protect operator and back guard for complete protection. The machine pictured is 13 inches wide, but can be furnished in any width. The maker states that with accurate temperature and pressure control it is ideal for control work or for research and development work. For details and prices write to Wheeler Roll Co., Kalamazoo, Mich.

Pentachlorophenol

Pentachlorophenol is being offered as protection against decay and insect attack on wooden and wood-lined pipe. The preservative is described as non-volatile and insoluble in water, clear and free from objectionable odors, and highly toxic to all decay-producing fungi, termites and other wood-destroying insects. Manufacturer states that it can be mixed with inexpensive oils possessing characteristics which permit painting after the wood has been treated. List of users includes pulp and paper mills where such corrosive liquids as salt water, acid waste disposal, chemical process lines, bleached and unbleached paper stock are processed in non-corroding wooden equipment. For details and prices write to Dow Chemical Co., Midland, Mich.

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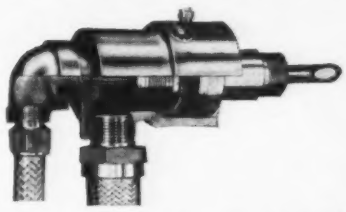

need of spring loading, provides self-adjusting pressure on extra heavy service and brings friction drag down to a new low. The ballbearing construction permits considerable horsepower saving, the maker states, and the flexible hose eliminates the need for complicated piping and supports. Available in plain (P) and siphon (S) types. For details and prices write to Perfecting Service Co., 6140 Cottage Grove avenue, Chicago, 37, Ill.

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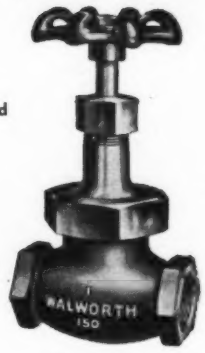

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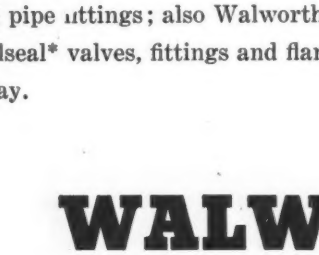

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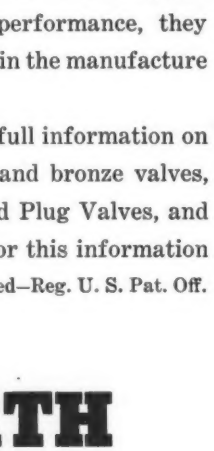

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Statistical Study of the Variables of Alpha-Cellulose Methods*

By A. S. O'Brien[1], L. K. Reitz[1], and R. C. Bloom[1]

Abstract

From the present study of the alpha-cellulose methods it was shown that moisture determinations must be made with extreme care if accurate results for alpha-cellulose are to be expected. It is suggested that vacuum dried pulp be used for the determination of alpha-cellulose, thus eliminating moisture determinations altogether.

The use of alcohol and ether to hasten drying does not produce reliable results. The method of sample preparation is very significant. Results obtained on ground samples were much lower than those obtained on thin sheet samples. The rinse with acetic acid is of no significance. The size of the sample, (1 or 3 grams) makes a slight difference in the alpha-cellulose results obtained. The amount of stirring during mercerization is a slightly significant variable. The method of adding sodium hydroxide whether in portions or all at once is of no significance. These statements on significance are based upon the 5% level of "F."

Dilution of the 17.5% sodium hydroxide to 8.3% followed by an additional 1 hour of standing (ACS) before filtering produced alpha-cellulose results which were just slightly lower than those obtained by diluting to 8.3% with stirring and then filtering at once (TAPPI). However, either of these dilution methods produced results which were very much lower than those obtained by filtering directly from the 17.5% sodium hydroxide without dilution.

Alpha-cellulose is arbitrarily defined as that percentage of industrial cellulose pulps that failed to dissolve in 17.5% sodium hydroxide at 20° C. Alpha-cellulose procedures are empirical, and it is, therefore, important to know which variables of the method are most significant. Almost all of the variables have been studied by other workers in the past. Bump *(3)* has shown that the concentration of alkali is not very critical and that solutions which were 10% to sodium hydroxide gave the same values for alpha-cellulose as 17.5% solutions. He also showed that the time of treatment with sodium hydroxide was not a very critical factor. Variations of 5 to 10 minutes in the time of treatment would not produce a measurable change in results. He also suggested that the ratio of pulp to alkali was of no significance within wide limits. Ritter *(7)* and other members of an American Chemical Society Subcommittee studied some of the variables of the alpha-cellulose procedure. They report that the temperature of wash water need not be rigidly controlled, and that mercerization in air gives the same yield of alpha-cellulose as mercerization in nitrogen. They also showed that the concentration of sodium hydroxide need not be exactly 17.5%. Results using 15.6% sodium hydroxide were the same within the limits of experimental error. The ACS committee also studied the problem of the dilution of the 17.5% sodium hydroxide prior to filtering, and recommended in their method IV (1929) that the sodium hydroxide cellulose mixture be diluted to 7.28% sodium hydroxide stirred and filtered at once. This was changed in 1943 to a dilution to 8.3% sodium hydroxide after which the samples are allowed to stand for 1 more hour and then filtered. The official TAPPI T-203 m-44 procedure, and previous editions of the same, recommend that after mercerization the sodium hydroxide be diluted to approximately 9.5%, stirred, and filtered at once. However there has been a difference of opinion on this point in the TAPPI Committee *(8)*. Dorée *(4)* favors the omission of the dilution operation in analyses made for the viscose industry.

The importance of sample preparation has been recognized for some time. In 1933 a TAPPI Committee *(8)* discussed the problem of ground samples versus thin sheet samples. Recently Browning *(1)* has presented clear evidence to show that grinding in a Koerner type mill leads to appreciable lowering of the alpha-cellulose content.

In the present work some of these variables have been studied again. The analysis of variance technique has been used to help in the interpretation of some of the data obtained.

A group of six variables were studied systematically by means of two series of analyses of variance. In addition several other variables were studied in preliminary experiments. Five different pulps were used in the study:

A—A chemical cotton of approximately 98.8% alpha-cellulose.

B—A high alpha well balanced calcium-base sulphite pulp of approximately 96% alpha-cellulose.

C—A semi-bleached kraft pulp of approximately 90% alpha-cellulose.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Hotel Commodore, New York, N. Y., Feb. 23-26, 1948.

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[1] Trade and Industrial Education, U. S. Office of Education, Washington, D. C.

TABLE I.—DATA SHOWING TIME REQUIRED TO DRY VARIOUS PULPS TO CONSTANT WEIGHT. TEMP. 60° C., VACUUM 29.5 IN.

Pulp Sample	Loss in Weight of Samples After Various Times, hr.					
	1½	2½	3½	4½	5½	6½
A	0.1200	0.1217	0.1238	0.1264	0.1265	0.1265
	0.0935	0.0940	0.0956	0.0972	0.0972	0.0972
B	0.1425	0.1446	0.1476	0.1503	0.1503	0.1503
	0.1511	0.1538	0.1567	0.1600	0.1600	0.1600
C	0.1767	0.1795	0.1831	0.1877	0.1877	0.1877
	0.1727	0.1756	0.1788	0.1832	0.1832	0.1832
E	0.1486	0.1515	0.1545	0.1577	0.1577	0.1577
	0.1137	0.1177	0.1199	0.1217	0.1217	0.1217
Z	0.1250	0.1269	0.1294	0.1322	0.1322	0.1322
	0.1430	0.1452	0.1482	0.1514	0.1514	0.1514

TABLE II.—EFFECT OF ORGANIC SOLVENTS ON ALPHA-CELLULOSE

Pulp Sample	No Treatment	Methyl Alcohol	Ethyl Alcohol	Acetone	Ethyl Alcohol Plus Ether
B	95.79	96.03	97.74	96.00	96.50
B	95.95	96.12	96.28	95.98	96.70
B	96.09	96.11	96.48	96.03	96.70
B	96.02	96.08	97.37	96.13	96.90
Average	95.96	96.09	96.97	96.04	96.70
Range	0.30	0.09	1.46	0.15	0.40

Two gram samples.
Washed with 50 ml. portion of organic solvents.

TABLE III.—DUPLICATE ALPHA-CELLULOSE VALUES FOR FIVE PULPS STUDIED

Sample	Ground Sample				Thin Sheet			
	A.C.S. Dilution		T.A.P.P.I. Dilution		A.C.S. Dilution		T.A.P.P.I. Dilution	
	Acetic Acid	No Acetic Acid	Acetic Acid	No Acetic Acid	Acetic Acid	No Acetic Acid	Acetic Acid	No Acetic Acid
A	97.92	97.47	97.42	98.07	98.50	98.53	98.52	98.54
	97.80	97.47	97.68	97.08	98.52	98.51	98.62	98.41
B	93.48	93.02	94.03	93.07	95.44	95.27	95.66	95.81
	93.40	93.34	93.78	93.15	95.19	95.30	95.45	95.79
C	87.31	87.25	88.44	88.26	89.43	89.07	89.96	89.74
	87.68	87.66	88.44	88.40	89.20	89.19	90.12	89.82
D	88.09	87.88	88.85	88.86	89.76	89.54	90.57	90.66
	87.89	87.95	88.72	88.70	89.74	89.68	90.75	90.63
E	82.70	82.86	83.42	83.29	84.81	84.23	84.86	84.81
	82.72	82.52	83.16	83.79	84.41	84.46	84.74	84.55

TABLE IV.—SUMMARY OF VARIANCE ANALYSES OF DATA FROM TABLE III

Source of Variance	Variance Ratios				
	Pulp A	Pulp B	Pulp C	Pulp D	Pulp E
Method of preparation..	**48.10	***396.09	***404.28	***1471.69	***140.21
Method of diluting.....	0.13	2.15	**96.34	***369.46	**25.96
Acetic acid wash	0.74	0.59	3.34	1.57	0.31
Preparation × dilution..	0.18	3.77	1.87	2.20	0.42
Preparation × acetic acid wash	0.29	3.02	0.82	0.16	0.03
Dilution × acetic acid wash	0.35	0.29	0.20	1.08	0.02
Preparation × dilution × acetic acid wash..	0.99	0.49	0.0005	0.20	1.68
Mean square of the residual	681.25	491.00	264.94	87.94	580.31

* 0.01 level>Variance Ratio>0.05 level.
** 0.001 level>Variance Ratio>0.01 level.
*** Variance Ratio>0.001 level.

TABLE V.—DUPLICATE ALPHA-CELLULOSE VALUES FOR THE FIVE PULPS STUDIED

Sample	1 Gram Sample				3 Gram Sample			
	One Minute Stirring		Ten Minute Stirring		One Minute Stirring		Ten Minute Stirring	
	Bulk Addition of NaOH	Portion Addition of NaOH	Bulk Addition of NaOH	Portion Addition of NaOH	Bulk Addition of NaOH	Portion Addition of NaOH	Bulk Addition of NaOH	Portion Addition of NaOH
A	99.00	98.92	98.95	98.91	98.86	98.92	98.91	98.82
	98.98	98.99	98.87	98.94	98.89	98.81	98.83	98.87
B	95.78	95.74	95.70	95.65	95.74	95.63	95.69	95.72
	95.78	95.89	95.73	95.79	95.76	95.49	95.75	95.70
C	89.70	89.68	89.73	89.64	90.15	90.08	89.96	90.21
	89.61	89.73	89.67	89.66	90.15	90.09	90.01	90.02
D	90.85	90.76	90.64	90.72	91.14	91.02	90.95	90.82
	91.02	90.93	90.64	90.77	91.04	91.00	90.75	90.96
E	86.86	86.98	86.93	86.66	86.66	86.89	86.34	86.64
	87.07	87.40	86.87	86.63	86.91	86.82	86.36	86.35

D—An unbleached kraft pulp of low alpha-cellulose.

E—Bleached sulphite pulp of low alpha-cellulose content, approximately 85%.

Each of these pulps was studied by means of two different analyses of variance. In one series the effect of grinding, dilution of 17.5% sodium hydroxide to 8.3% before filtering, and rinsing with acetic acid were investigated. In the second series sample size, stirring, and manner of adding sodium hydroxide to the pulp were the variables studied. Three other variables were studied during the course of preliminary work which was aimed at the elimination of all variables except the ones being investigated. These will be described first.

The moisture content of pulp must be determined with extreme care. A good analytical balance and reasonably well calibrated weights are required. It was shown that neither of two available automatic projection reading balances could be used for moisture determinations. Other experiments indicated that not less than 1 gram of pulp should be used for determining moisture.

The most serious problem in connection with moisture analysis of pulp is that it is very difficult to get a sufficiently large sample of pulp for analysis which is perfectly uniform in moisture content. The conditioning process in a closed jar recommended in T-203 does not produce a perfectly uniform sample even after several days of aging.

The method finally adopted for the experiments of this study eliminated the moisture determination altogether. The pulp samples for alpha-cellulose determination were weighed to the closest 0.1 gram into tared weighing bottles and then dried in a vacuum oven at 60° C. for 5 to 6 hours. After determining the exact weight of the vacuum dried sample, the pulp was transferred to a beaker for the alpha-cellulose determination. The time required to remove the moisture from various pulps in a vacuum oven at 60° C. is shown by the data in Table I.

The use of organic solvents to hasten drying is given as an alternative procedure in T-203. A TAPPI Subcommittee on alpha-cellulose collected some data in an inter-laboratory test which seemed to indicate that the use of organic solvents produced higher results than the regular oven drying method. This point was studied more systematically and the results are given in Table II.

The data show that acetone or methyl alcohol could probably be used to hasten drying, but that the use of ethyl alcohol and ether leads to high results. The increase in weight because of ethanol was of the order of 1%.

Vacuum drying lowered all the results approximately 0.3%, but did not remove the relatively large amounts of bound ethyl alcohol. As far as the present study is concerned it will suffice to point out that the use of ethanol followed by ether, as recommended in T-203, does not give reliable results.

During preliminary work it was shown that the weighing of alpha-cellulose residues is a rather difficult task. In the first place the dried alpha-cellulose is very hygroscopic and unless they are kept in weighing bottles having tightly fitted stoppers they will take on weight. This absorption of moisture will take place in a calcium chloride desiccator, and even in a magnesium perchlorate dessicator. Using weighing bottles with well-ground stoppers will prevent this moisture absorption.

The weight of the alpha-cellulose will also depend upon the relative humidity of the air circulating through the oven during the last stages of the drying. Also, the weight after over-night drying at 105° C. can be lowered by approximately 0.4% by an additional 4 to 5 hours in a vacuum oven held at either 105° C. or 60° C. Still more vacuum drying does not further decrease weight.

It was also shown that results obtained by vacuum drying are more precise than those obtained by overnight drying in a regular oven at 105° C. Day to day variations are less when vacuum drying is used. The time required to reach constant weight is also greatly reduced. All the results reported in this study were

obtained by vacuum drying. It was observed that when this change to vacuum drying was made the "residual" term of the analysis of variance dropped considerably.

At least three weighings are involved (not including a moisture analysis) in every alpha-cellulose determination. All of these must be made with calibrated weights on a good analytical balance. Calculations will show that, using a 1 gram sample, an error of 0.1% in alpha-cellulose can result from errors of 0.5 mg. in the weight of both the original sample and the alpha-cellulose residue. Even considerably larger errors than this could be introduced by careless weighing.

All the experiments of this series followed one general procedure, except that changes were made at three points in order to study the variables: (a) preparation of sample, (b) effect of dilution technique used to bring the sodium hydroxide to 8.3%, and (c) the effect of omitting the acetic acid rinse.

The first of two methods used to prepare the samples was grinding in an Abbe Mill of the Koerner type. A screen was used which had sixty ¼ inch holes in an area 2 by 5 inches. The grinding was done slowly to avoid overheating as far as possible. Such samples will be referred to in this article as "ground samples." Other samples were prepared by dispersing pulp lap in a British sheet mold disintegrator. The slurry was then used to prepare very thin sheets in a British sheet mold. Samples thus prepared will be referred to as "thin sheet samples."

The variable referred to as "diluting to 8.3%" involves diluting the 17.5% sodium hydroxide to 8.3%, after a 45-minute dissolving period. The diluted samples were then allowed to stand for 1 more hour at 20° C. before filtering. This procedure is essentially that recommended in the ACS method. In the other half of the experiment, the TAPPI procedure was followed in that samples were diluted with 75 ml. of water, stirred thoroughly, and then filtered at once.

The variable 'acetic acid rinse" was included to determine the value of rinsing with acetic acid which is supposed to remove the last trace of sodium hydroxide from the fibers. The total volume of distilled water used for washing was the same in both groups of experiments, but rinsing with 40 ml. of 10% acetic acid was omitted in one-half of the samples.

Approximately 2 gram samples of vacuum dried pulp were used in all the experiments of this series. This was accomplished by placing about 2 grams of pulp in a tared weighing bottle. The pulp sample was then dried for 5 to 6 hours in a vacuum oven at 60° C. The exact weight of the sample was then determined using a good analytical balance. The sodium hydroxide was added to the pulp all at once and the mixture carefully stirred for 1 minute. The samples were then allowed to stand for 45 minutes unstirred, after which they were diluted and filtered or diluted and allowed to stand for 1 hour and then filtered. The alpha-cellulose was then caught in a Gooch crucible, washed as described above, and transferred to tared weighing bottles. They were dried first overnight in a regular oven at 105°C. and then for 4 to 5 hours in a vacuum oven at 60° C. The alpha residues were then weighed on a good analytical balance.

The results obtained on the five pulps after vacuum drying are given in Table III.

These data were subjected to an analysis of variance in order to determine which variables or combination of variables in the form of interactions were significant. An excellent description of the method of setting up experiments for an analysis of variance is given by Brownlee *(2)*. He also discusses the methods of handling the data obtained and of determining the significance of the various terms and interactions studied. Freeman *(5)* also gives a discussion of these points. The results of the analysis of variance are given in Table IV. A term is judged non-significant when the variance ratio does not exceed the 5% level of "F".

It is very apparent from this table and from a study of the original data that the method of sample preparation is very significant. The effects of grinding are very noticeable for all pulps. The alpha-cellulose content is lowered 1% to 2% as a result of the action of a Koerner type mill.

There is no significant variation which can be traced to rinsing with acetic acid. As Table IV shows, this term and all interactions involving this term, are low for all of the pulps studied.

The variation in diluting technique came out significant for three of the five pulps studied, and where significant the results were lower in those experiments using the ACS technique. This subject of the effect of diluting prior to filtering was investigated by additional experiments which are described in a subsequent section of this article.

None of the first order interactions such as grinding × dilution, etc. came out significant, and the second order interaction grinding × dilution × rinse was negative for all pulps.

The first variable of this series of experiments was sample size. One and three gram samples were selected to bring out any difference which could be traced to this factor.

To study the effects of stirring one-half of the experiments were stirred for 10 minutes in a manner similar to that recommended in T-203, with a stirring rod having a flattened end. The other samples were stirred for only 1 minute in a similar manner.

The third variable was the method of adding sodium hydroxide. In one-half of the experiments the entire volume of sodium hydroxide was added all at once, and in the other half the sodium hydroxide was added at regular intervals during the stirring period.

All the experiments of this series were filtered directly from the 17.5% sodium hydroxide solution without dilution, refiltered several times to catch all of the fibers and then were washed with water. No acetic acid was used to rinse these samples. The alpha-cellulose residues were dried in a vacuum oven at 60° for 5 hours. The results obtained in this series of experiments are given in Table V.

The summary ot the analysis of variance appears in Table VI.

The manner in which sodium hydroxide is added to the pulp, whether in bulk or in portions, was not significant in any case. The term "sample size" came out significant for four of the five pulps and nearly significant for the fifth. For sulphite pulps the results obtained from 1 gram samples were higher than those

TABLE VI.—SUMMARY OF VARIANCE ANALYSES OF DATA FROM TABLE V

Source of Variance	Variance Ratio				
	Pulp A	Pulp B	Pulp C	Pulp D	Pulp E
Sample size	**12.96	5.02	***203.59	**14.29	**15.85
Stirring	2.33	0.10	1.32	**17.86	**20.87
NaOH addition	0.43	1.53	0.38	0.03	0.35
Sample size × stirring	0.76	4.68	1.10	0.05	0.35
Sample size × NaOH addition	0.05	3.44	0.28	0.08	0.61
Stirring × NaOH addition	0.11	1.34	0.77	2.97	1.70
Sample size × stirring × NaOH addition	0.58	2.63	*6.44	0.15	3.40
Mean square of the residual	21.00	41.875	32.625	80.875	234.75

* 0.01 level>Variance Ratio>0.05 level.
** 0.001 level>Variance Ratio>0.01 level.
*** Variance Ratio>0.001 level.

obtained from 3-gram samples. This was reversed for kraft pulps, where 3-gram samples gave slightly higher results. However, the variations introduced by going from 1-gram to a 3-gram sample were not very large of the order of 0.1 to 0.3% in the alpha-cellulose content.

The third variable of this series, that of the method of stirring, came out significant for two of the five pulps, and where significant the samples receiving the 10 minutes stirring were lower in alpha-cellulose than the 1 minute experiments. The results for the high alpha pulps were not affected by stirring, but the pulps containing 90% or less were the hard pulps, and were slightly sensitive to time of stirring. However, the magnitude of the difference produced by this stirring variable was very small, of the order of 0.2% in alpha-cellulose.

None of the first order interactions were significant, and the second order interaction sample size × stirring × sodium hydroxide was significant in only one case.

Since the factor "dilution to 8.3% sodium hydroxide" was significant in some cases, it was decided to eliminate this variable in the second series of experiments; see Table V. It was eliminated by omitting the dilution altogether and filtering directly from the 17.5% sodium hydroxide solution. This caused the results to come out much higher as a comparison of Table III and Table V will show. To clear up this point, another set of experiments was run on all five pulps. One-half of the experiments followed a procedure in which the 17.5% sodium hydroxide was diluted to 8.3% and the samples allowed to stand another hour, similar to the method recommended by ACS.

The samples were filtered, washed, and dried in the ordinary manner. All the pulps were then analyzed by exactly the same procedure except that the alpha-cellulose was filtered directly from the 17.5% sodium hydroxide. The undiluted filtrate was refiltered until all of the fibers were retained in the crucible. As much as possible of the 17.5% sodium hydroxide was removed from the pad by suction and pressing. The alpha-cellulose residue was then washed rapidly with a large volume of distilled water and the analysis completed as described above. The results are presented in Table VII.

TABLE VII.—EFFECT OF DILUTION

Pulp Sample	No Dilution Duplicate Values	Range	Av.	Diluted Duplicate Values	Range	Av.	Per Cent Difference Between Methods
A	98.84			98.41			
	98.82	0.02	98.83	98.36	0.05	98.39	0.44
B	95.62			95.27			
	95.70	0.12	95.66	95.34	0.07	95.31	0.35
C	90.06			89.24			
	90.29	0.23	90.18	89.28	0.04	89.26	0.92
D	90.61			89.45			
	90.74	0.13	90.68	89.44	0.01	89.45	1.23
E	86.66			84.01			
	86.98	0.32	86.82	83.96	0.05	83.99	2.83

These results show that there is a marked decrease in the alpha-cellulose values obtained on the samples diluted to 8.3% before filtering. This difference amounts to approximately 2% for sample E where the pulp contains approximately 15% beta-gamma-cellulose. The difference between diluting to 8.3% with another hour of standing (ACS) and diluting to approximately 8% and filtering at once (TAPPI) was very slight (See Table IV). However, either type of dilution gives values much lower than filtering the fibers directly from the 17.5% sodium hydroxide.

In view of the importance of obtaining the correct values for the moisture content, it seems advisable to consider the possibility of eliminating this determination by using vacuum dried pulp samples for the alpha-cellulose determination. Two- or three-gram samples of pulp can be dried to constant weight in 4 to 6 hours in a vacuum oven at 60° C. This would eliminate all the weighings of a moisture determination and add one rough weighing. Our data shows that this heating period at 60° C. does not degrade the pulp. This also seems likely from the discussion of Heuser *(6)*.

Alcohol and ether gives high results and, therefore, should not be used to hasten drying. Methyl alcohol and acetone do not combine with cellulose and apparently give reliable results. However, vacuum drying appears to be a more satisfactory way to shorten the drying time. The use of a vacuum oven has not only the advantage of increased speed, but the results by this method of drying are also more precise. The importance of careful weighing at all stages of the alpha-cellulose determination cannot be over emphasized.

There are two variables which did not come out significant for any pulp. They were the acetic acid rinse and the manner of adding sodium hydroxide—whether in portions or all at once. It seems advisable to consider the elimination of the acetic acid rinse and the selection of the most rapid or convenient method of adding the alkali. Sample size (1 or 3 grams) was slightly significant and should be fixed at some convenient value. Smaller samples filter more readily but larger samples would be preferred in view of the significance of very small errors in weighing. Probably a compromise at 2 grams would be advisable.

The method of stirring is slightly significant for some pulps. The stirring procedure should, therefore, be fixed in any alpha-cellulose method, but it seems unnecessary to insist upon any elaborate or time consuming stirring procedure.

The method of sample preparation is of great importance. It seems advisable in view of this and other previous work to eliminate disintegration in a mill of the Koerner type. Other less drastic methods should be used. Pulp samples can be picked apart by hand or made into thin sheets. The method of disintegration is not so important for soft pulp samples. Harder pulps undoubtedly present a greater problem. It appears that the use of thin sheets will always give good results but may not always be necessary. More work is in progress on this point.

Whether the 17.5% sodium hydroxide should be diluted before filtering is a very important question. Results obtained by filtering directly from the 17.5% sodium hydroxide are much higher (Table VII) than those obtained by any method of dilution. Whether the sodium hydroxide should be diluted at all appears to be much more important than the selection of a particular dilution technique. Inasmuch as alpha-cellulose is defined as that percentage of the pulp not dissolved by 17.5% sodium hydroxide, it seems advisable to separate the fibers from the mercerization liquid without any dilution. On the other hand, diluting will lessen the filtering problems. However, if it is a matter of principle versus convenience, it would be better to adhere to the correct principle in the procedure.

The authors take this occasion to thank the Hercules Powder Co., the Eastern Corporation, and the Weyerhaeuser Timber Co. for supplying pulp samples used in this study.

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United States Patents on Papermaking

Second Quarter, 1948

Clarence J. West, Chairman, Committee on Bibliography, TAPPI

The following list of patents has been compiled from the current numbers of the Official Gazette of the United States Patent Office. Because, as a rule, only one claim is published in the Gazette, it is not claimed that the list is complete; also, it is possible that the list may contain some patents that do not apply specifically to pulp and paper manufacture.

Copies of any of the following patents can be obtained from the United States Patent Office, Washington 25, D. C., by sending twenty-five cents for each patent desired.

The previous list of patents for 1948 appeared in *Paper Trade Journal* 126, No. 17:59-60 (April 22, 1948).

April 6, 1948

2,438,890. Method of making bitumen coated fibrous material. Charles M. Baskin, assignor to Standard Oil Development Company, Linden, N. J. Filed July 29, 1944. 4 claims. (Cl. 117-30). A fibrous material is impregnated with a bituminous saturant and coated with a pulverized asphalt of high melting point mixed with a powdered metallic salt of stearic acid.

2,438,981. Packaging method. Harry F. Waters, New York, N. Y. Filed Oct. 6, 1945. 4 claims. (Cl. 93-38.01). A fluid-tight duplex container is formed by heat sealing a fluid-tight sheet material on a mandrel and combining such a bag with a carton.

2,438,982. Container. Marshall I. Williamson, assignor to National Folding Box Company, Incorporated, New Haven, Conn. Filed July 29, 1943. 7 claims. (229-23). The container comprises an inner shell which telescopes into an outer shell and a cover section adapted to telescope over the top end of the inner shell.

2,439,051. Flexible sheet material comprising a surface coating containing polyvinyl chlorides. John H. McGill, assignor to Imperial Chemical Industries Limited, London, England. Filed Oct. 28, 1942. 4 claims. (Cl. 117-72). Polyvinyl chloride is dispersed in a solution of a polymethcrylic ester of a saturated alcohol containing one to three carbon atoms, the solvent being benzene or the like. When coated onto paper, board, and the like, the surface does not exhibit stickiness.

2,439,103. Cellulose ester melt-coating composition. Martin Salo and Harold F. Vivian, assignors to Eastman Kodak Company, Rochester, N. Y. Filed March 8, 1946. 9 claims. (Cl. 106-181). A nonblocking hot melt-coating composition consits of 50-85% of a cellulose aceate butyrate and (15-50) of a plasticized [essentially di (2-ethylhexyl) sebacate]. The coating can be applied to paper at a temperature of 170° C. The coated paper is suitable as a base for photographic paper for quick processing.

2,439,137. Laminated plastic article. Auguste V. Keller, assignor to Thompson's Ltd., New York, N. Y. Filed Dec. 20, 1940. 2 claims. (Cl. 154-129). A molded article consists of resin-impregnated fibrous materials, the resin content of the various layers differing to provide layers of varied density and varied heat conductivity, with heat conducting metallic layers interposed and bonded to certain of the layers.

April 13, 1948

2,439,377. Utilization of tall oil. Martin K. Bare and Warren Stubblebine, assignor to Armstrong Cork Company, Lancaster, Pa. Filed July 31, 1943. 8 claims. (Cl. 106-123). A mixture of 62.5 parts of linseed oil, 25 parts of crude tall oil, and 12.5 parts of rosin are hated and oxidized for about 30 hours in the presence of 1 part of litharge and 0.016 part of manganese resinate. The gel can be used in the manufacture of linoleum; the same components can be used as a linoleum cement.

2,439,395. Fire-resistant coating composition. Martin Leatherman, Hyattsville, Md. Filed June 30, 1945. 3 claims. (Cl. 260-30.6). The fireproofing composition contains among its components vinyl acetate chloride copolymer, butyl methacrylate, tricresyl phosphate, triphenyl phosphate, zinc carbonate, an inert pigment, etc.

2,439,396. Fire-resistant coating composition. Martin Leatherman, Hyattsville, Md. Filed June 30, 1945. 5 claims. (Cl. 260-30.6). A pigment paste is reported which may be blended with vinyl acetate chloride copolymer and polyvinyl chloride.

2,439,435. Moistureproof packaging. Ralph R. Richardson, Walter T. Ritter, and Robert O. Ragan, assignors to Chicago Carton Company, Chicago, Ill. Filed July 7, 1944. 2 claims. (Cl. 229-37). A method is described for sealing a fibrous container with a bitumen wax so that the sealed container, when made of moistureproof board, will resist penetration by moisture vapor and water.

2,439,481. Pressure-sensitive adhesive sheet material. John B. Martin, assignor to The Kendall Company, Boston, Mass. Filed July 3, 1944. 12 claims. (Cl. 117-68.5). A pressure-sensitive adhesive sheet material consists of a sheet of paper coated on one side with a plybutylene adhesive and on the other with a water-insoluble metallic stearate or palmitate.

2,439,508. Log turning apparatus. Miled L. Edwards, Donald K. MacBain, and Lester M. Johnson, assignors to Weyehaeuser Timber Company, Longview, Wash. Filed July 14, 1942. 8 claims. (Cl. 144-208). An apparatus is described for periodically shifting a log rotationally upon a support in a hydraulic barker.

2,439,568. Saw guard. Leyel C. Hall, Connell, Wash. Filed April 24, 1944. 2 claims. (Cl. 229-88). A guard for the blade of a carpenter's saw is manufactured of flexible heavy paper, plastic material, and the like.

2,439,584. Bag adapted for display by suspension. Harold P. Shumann, Pittsburgh, Pa. Filed Nov. 14, 1944. 1 claim. (Cl. 229-62). An end enclosure is provided for a flattened tube so that the material of the tube itself will form a loop whereby the package can be suspended from a hook in a display rack.

2,439,667. Method of making laminated electrical insulating material. Kenneth N. Mathes, assignor to General Electric Company, Schenectady, N. Y. Filed Sept. 29, 1943. 3 claims. (Cl. 154-2.6). One form of the invention consists of molded laminations of fibrous material impregnated and coated with a synthetic resin and facings of asbestos paper which have been treated with phosphoric acid or its salts.

2,439,722. Drying apparatus. William Dreisel, assignor to Andrews & Goodrich, Inc., Dorchester, Mass. Filed Feb. 24, 1947. 2 claims. (Cl. 34-159). The invention provides an improvement over the type of drier using the conventional endless apron for conveying cloth or paper through the drying space in that the web is supported on rotating rolls. Means are provided for projecting air jets against the two surfaces of the web.

2,439,761. Apparatus and method for softening sanitary napkin pads. Oscar T. Thompson and Don D. Feagles, assignors to International Cellucotton Products Company, Chicago, Ill. Filed Oct. 26, 1944. 9 claims. (Cl. 154-29). The edges of an elongated, multi-ply crepe tissue paper pad, which are hard because of the shearing operation in their preparation, are softened by passing the pad endwise between combining or scraping means to break down the edges.

2,439,768. Receptacle. Charles O. Ball, assignor to Owens-Illinois Glass Company. Filed May 19, 1945. 3 claims. (Cl. 229-38). The upper end of the container comprises a three-ply assembly of folded flaps provided with a pour opening therethrough and a plug for sealing the opening.

April 20, 1948

2,439,918. Method of laminating. Robert W. Auxier and Patrick Norelli, assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa. Filed March 18, 1944. 2 claims. (Cl. 154-126). A method is proposed for the dielectric heating of a moving composite mass carrying a resinous material while simultaneously subjecting the mass to a progressively increasing pressure to effect the continuous consolidation of the mass.

2,439,969. Paper board chest. Wilbur G. Anderson, Jr., assignor to American Box Board Company, Grand Rapids, Mich. Filed April 21, 1947. 5 claims. (Cl. 229-44). A method is given for the construction of a chest designed primarily to carry apples and the like.

2,440,120. Folding box machine. William A. Ringler, assignor to The Gardner-Richardson Company, Middeltown, Ohio. Filed Oct. 19, 1945. 5 claims. (Cl. 93-53). An automatic machine is described for the closing of cartons which have a cover hinged to the body portion and which, after filling the carton, is telescoped over the side walls of the body portion.

2,440,193. Method of sealing and reinforcing cartons with tape and the tape as an article of manufacture. Lewis Davis and Edwin C. Tuukkanen, assignors to McLaurin-Jones Co., Brookfield, Mass. Filed Jan. 4, 1944. 7 claims. (Cl. 93-56). The adhesive for a sealing tape consists of a mixture of protein-type glue blended with an asphalt emulsion.

2,440,201. Fire-resistant cellulose esters and ethers. Joseph H. Klaber and John Bjorksten, assignors to Quaker Chemical Products Corp., Conshohocken, Pa. Filed Dec. 23, 1944. 12 claims. (Cl. 106-194). A cellulose ether or ester has 1-10% ammonium thiocyante dissolved therein.

2,440,202. Solid fire-resistant cellulose compounds. Joseph H. Klaber and John Bjorksten, assignors to Quaker Chemical Products Corp., Conshohocken, Pa. Filed March 7, 1945. 9 claims. (Cl. 106-186). A cellulose ester or ether contains from 1-12% of thiourea or an alkyl substituted derivative.

April 27, 1948

2,440,346. Paper drying apparatus. Martin Phillips, assignor to Appleton Coated Paper Company, Appleton, Wis. Filed Oct. 16, 1943. 6 claims. (Cl. 271-2.2). In the festoon drying of paper, the loop takeup mechanism of the drier is provided with a positive control for the release of the stick over which the material is dried is looped. The stick is released before the loop is taken up and, by continually keeping a certain amount of loop in the material at the time of relase, the material will not form a reverse loop.

2,440,390. Apparatus for making convolute wound tubing from sheet material. Boris Bogoslowsky, Jackson Heights, N. Y. Filed Oct. 27, 1945. 5 claims. (Cl. 93-31). An apparatus is described for the preparation of convolute wound tubing from sheets of thermoplastic material or from sheets coated or laminated with thermoplastic or heatsealing materials.

2,440,391. Apparatus for shaping tubular blanks. Boris Bogoslowsky, Jackson Heights, N. Y. Filed Dec. 8, 1944. 2 claims. (Cl. 93-36.8). This patent provides for the formation of an embryo tube having a shoulder and an elongated tubular neck consisting of folded material which may be subjected to pressure to form a completed collapsible tube.

2,440,526. Fibrous sheet material for the electrolytic formation of an azo dyestuff thereon. Myer Solomon, assignor to Radio Corporation of America, New York, N. Y. Filed Dec. 23, 1942. 8 claims. (Cl. 204-2). The surface of a fibrous sheet material is uniformly treated with an aqueous solution of a dyestuff-forming composition consisting substantially of a diazotizable primary amine, sodium nitrite, and water-soluble electrolyte, and an agent to combine with the diazonium compound to form an azo dye.

2,440,601. Production of clay suspensions. Gilbert K. Dickerman, assignor to Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis. Filed Nov. 14, 1946. 3 claims. (Cl. 106-308). Clay slips with 67% or less of solids content have a tendency for the clay particles to settle out on standing. However, if the solids contents are increased to 68-70%, the slip remains in a fluid pumpable condition, with very little if any tendency to settle out over a period of 8-10 days. Directions are given for the production of slips with such clay contents.

May 4, 1948

2,440,727. Papermaking apparatus. John A. Rosmait, assignor to D. J. Murray Manufacturing Co., Wausau, Wis. Filed Feb. 14, 1945. 8 claims. (Cl. 92-44). A flow mixer.

2,440,802 Method of making electrical conductors. Christopher J. Kroger, assignor to Western Electric Company, Incorporated, New York, N. Y. Filed July 20, 1943. 8 claims. (Cl. 92-55). A conductive core is coated with an emulsion of polyvinyl acetate, polyvinyl alcohol, or methyl methacrylate and then with a sheath of insulating pulp fibers.

2,440,839. Rotary drum drying apparatus having means to guide web over drum. Charles W. Apgar and Abraham L. Rosenfeld, assignors to Charles W. Apgar, Abraham L. Rosenfeld, and Frederic R. Mann, Philadelphia, Pa., as trustees. Filed Sept. 10, 1945. 4 claims. (Cl. 34-110). The

apparatus is designed for preheating the liner webs employed in the fabrication of corrugated board.

2,440,840. Carton erecting apparatus. Preston J. Blackwell, assignor to Robert Gair Company, Inc., New York, N. Y. Filed March 24, 1945. 13 claims. (Cl. 93-53). An apparatus for erecting flatly folded cartons.

2,441,014. Device for manufacturing pasteboard containers. Henry G. Faucherre, assignor to Neher A.G., Bern, Switzerland. Filed Jan. 22, 1945. 2 claims. (Cl. 93-36.5). The closure element consists of a disk of paperboard impregnated with cellulose nitrate and urea-formaldehyde resin. The method of applying the closure to the container is described.

MAY 11, 1948

2,441,125. Process of making activated carbon. Ernst Berl, Pittsburgh, Pa.; Walter G. Berl, executor. Filed Sept. 23, 1942. 10 claims. (Cl. 252-287). The calcium compounds of sulfite waste liquor are transformed into potassium compounds, the filtrate evaporated and the residue heated to 300-600° C., and the water-soluble potassium salts heated with potassium sulfide, potassium sulfate, potassium cyanide, or other salt at 800-1200° C.

2,441,169. Machine for forming artificial board. Charles Roman, Miami, Fla. 5 claims. (Cl. 92-38). A machine is described for the preparation of a board from a mixture of sawdust, wood pulp, or other cellulose-containing material and a suitable binder.

2,441,197. Treatment of tall oil. Nicholas L. Kalman, assignor to Ridbo Laboratories, Inc., Paterson, N. J. Filed June 9, 1945. 10 claims. (Cl. 260-97.5). The color and odor of tall oil can be improved and the chemical characteristics can be altered by pretreatment with a compound of phosphorus, followed by distillation, or by distillation directly without any extended period of pretreatment.

2,441,198. Tall oil treatment. Vigen K. Babayan, assignor to Ridbo Laboratories, Inc., Paterson, N. J. Filed June 18, 1945. 1 claim. (Cl. 260-97.5). Tall oil is heated with about 1.5% of 85% orthophosphoric acid for 1-2 hours at a temperature of 300° C., following which it is distilled in a vacuum in such a manner that the distillate passes through a superheated zone somewhat above 250° C.

2,441,372. Carton-forming machine. John J. Quigley and Philip Ricklefs, assignor to Block Drug Company, Inc., Jersey City, N. J. The apparatus is suitable for setting up flat knocked-down cartons into their open assembled form, with one end of the carton open so that it can be filled.

2,441,395. Display easel. Kenneth T. Buttery, assignor to Sutherland Paper Company, Kalamazoo, Mich. Filed March 4, 1946. 4 claims. (Cl. 248-198).

2,441,410. Method and apparatus for closing cartons. Reynold Guyer and Henry O. Ronning, assignors to Waldorf Paper Products Company, St. Paul, Minn. Filed Feb. 5, 1945. 25 claims. (Cl. 93-7). A method for closing cartons for frozen foods in which a liner of cellophane or similar material is used.

2,441,445. Method and machine for forming and filling reclosable cartons. William A. Ringler, Walter E. Sooy, and Rudolf W. von Sydow, assignors to The Gardner-Richardson Company, Middletown, Ohio. Filed April 12, 1943. 19 claims. (Cl. 93-6). A means and method for erecting a carton, filling it, closing and sealing the bottom end, forming a click-top structure, closing the top, and delivering the finished package, as a series of interconnected steps.

2,441,477. Food package. Robert A. Farrell, assignor to Marathon Corporation, Rothschild, Wis. Filed Jan. 15, 1945. 3 claims. (Cl. 99-171). A package for fresh yeast cakes has an internal layer of relatively porous creped water-absorbent tissue adhered by a thermoplastic adhesive to a relatively impermeable base sheet.

2,441,523. Method of treating organic fabric. Alger L. Ward, assignor to The United Gas Improvement Company, Philadelphia, Pa. Filed April 14, 1945. 6 claims. (Cl. 117-161). A disersion of a synthetic resin is suitable for coating and impregnating paper, cotton, rayon, and the like.

MAY 18, 1948

2,441,778. Liner for produce containers. George W. Traver, assignor to Traver Corporation, Chicago, Ill. Filed July 10, 1943. 5 claims. (Cl. 229-14). A container for eggs and the like is lined with a heat-sealing cellophane made in the form of a bag.

MAY, 25, 1948

2,441,946. Process for making soybean protein-phenolic resin adhesive and product. Russell H. Hieronymus, assignor to The Drackett Company, Cincinnati, Ohio. Filed April 17, 1945. 5 claims. (Cl. 260-7). A mixture of 18 parts of protein and 12 parts of furfural is treated with 53 parts of a phenolic formadehyde resin solution of approximately 63% solids content and 2.2% free formaldehyde; the mass is stirred for 1-3 hours and the product is dried at about 60° C. to approximately 14% moisture content; 45 pounds of the resulting glue may be applied to 1000 square feet single glue line.

2,441,961. Decorated wall covering. Albert E. Gessler, Clifford J. Rolle, and Francis J. Tuttle, assignors to Interchemical Corporation, New York, N. Y. Filed March 11, 1942. 6 claims. (Cl. 154-50). A wall covering consists of paper one side of which is covered with a water-impervious film.

2,442,079. Carton. Robert M. Dunning, assignor to Waldorf Paper Products Company, St. Paul, Minn. Filed July 14, 1943. 3 claims. (Cl. 229-37). The invention provides a support within the carton upon which the opposed end flaps of the carton may rest when in folded position. The opposed flaps are held in sealing position by the internal support.

2,442,107. Abrasive and polishing tape. Maurice G. L. Wallich, assignor to Paper Strap, Inc., Portland, Oreg. Filed Sept. 25, 1946. 2 claims. (Cl. 51-185). A flexible abarsive coated tape comprises a flat strip of relatively thin tough paper, folded upon itself, and coated with a layer of abrasive material.

2,442,115. Method of making paper-covered veneer. Ralph J. Byers and Moss B. Christian, assignors to Chicago Mill and Lumber Company, Chicago, Ill. Filed Nov. 2, 1944. 2 claims. (Cl. 154-132). A thin green wood sheet is coated on each side with an adhesive and sheets of kraft paper and applied to each side, after which the product is cold and then hot pressed.

2,442,161. Method of making gas filled flexible containers. Samuel Bergstein, Cincinnati, Ohio. Filed Oct. 10, 1944. 5 claims. (Cl. 93-2). The goods are placed in a flexible walled package over which is placed an external tough film of gastight substance (e.g., a mixture of paraffin, ester gum, and Vistanex No. 6), following which one or more openings are made in the container for the introduction of the special atmosphere desired.

2,442,321. Method of making gypsum board and like gypsum products and products of such process. Charles H. Cuppett, assignor to Newark Plaster Company, Newark, N. J. Filed Jan. 17, 1948. 10 claims. (Cl. 154-86).

JUNE 1, 1948

2,442,332. Treatment of wood pulp. Clifford E. Haney, Mervin E. Martin, and Daniel L. Sherk, assignors to Celanese Corporation of America, New York, N. Y. Filed July 27, 1943. 12 claims. (Cl. 260-229). Partially acetylated wood pulp is treated with peracetic acid in acetic acid, by which the pulp is substantially improved in color.

2,442,422. Method of building material. Fred R. Loetscher, Dubuque, Iowa. Filed March 2, 1944. 12 claims. (Cl. 154-133). Plywood is coated with an adhesive and to each side is applied a sheet of resin-impregnated paper.

2,442,431. Sleve inserting device for valve bags. Harry Peters and Clyde D. Pierson, assignors to The Raymond Bag Company, Middletown, Ohio. Filed Nov. 29, 1945. 28 claims. (Cl. 93-8).

2,442,646. Sifter envelope. Mack R. Fields, assignor to Abbott Laboratories, North Chicago, Ill. Filed June 7, 1944. 7 claims. (Cl. 229-68).

2,442,673. Device for watermarking paper. Harold P. Bailey and George S. Taylor, assignors to International Paper Company, New York, N. Y. Filed July 24, 1946. 5 claims. (Cl. 92-48). The invention provides mounting devices for watermarking wheels which are carried by a transversely disposed bar or shaft rigidly secured to the stationary framework of a papermaking machine.

JUNE 8, 1948

2,442,856. Machine for forming tubes. Lester H. Messinger, assignor to Remington Arms Company, Inc., Bridgeport, Conn. Filed Aug. 24, 1945. 12 claims. (Cl. 93-81).

2,442,876. Method of making pressure-sensitive adhesive sheeting. John W. Pearson, assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn. Filed May 27, 1944. 4 claims. (Cl. 117-112). The normally tacky pressure-sensitive adhesive sheetings has a hydrophilic moisture-permeable backing.

2,442,888. Stock consistency responsive device. Hervey G. Cram, assignor to Manitowoc Shipbuilding Company, Manitowoc, Wis. Filed March 30, 1944. 7 claims. (Cl. 73-63).

2,442,936. Bag and method of making same. Howard A. Rohdin, assignor to Packaging Industries, Inc., Montclair, N. J. Filed Dec. 6, 1944. 2 claims. (Cl. 93-35). The entire inner sheet is heat sealable and the outer surface is formed of previous fibrous material.

2,442,948. Apparatus for making convolute wound tubing. Boris Bogoslowsky, Jackson Heights, N. Y. Filed March 13, 1946. 5 claims. (Cl. 93-81).

2,442,959. End structure for powder cans. Robert Nyden and Harry K. Dickerman, assignors to F. N. Burt Company, Inc., Buffalo, N. Y. Filed July 6, 1945. 6 claims. (Cl. 229-5.5).

2,442,990. Apparatus for washing paper stock. Sidney D. Wells, assignor to The Institute of Paper Chemistry, Appleton, Wis. Filed June 24, 1942. 1 claim. (Cl. 92-20). A three-stage washing apparatus is described for treating deinked paper stock.

2,443,011. Web handling means for bread wrapping machines. Charles H. Petskeyes, assignor to Gellman Manufacturing Company, Rock Island, Ill. Filed June 9, 1945. 9 claims. (Cl. 93-2). A paper web holding and tensioning means for use in a wrapping machine.

JUNE 15, 1948

2,443,221. Method of making grease- and moistureproof coated paperboard. Samuel Bergstein, assignor to Robert M. and Frank D. Bergstein, Cincinnati, Ohio, as trustees. Filed Aug. 14, 1944. 4 claims. (Cl. 117-158). Boxboard is treated with a mixture of 20-85% of paraffin and 15-80% of microcrystalline wax at a temperature less than 45° above its melting point.

2,443,222. Process for waxing paper. Samuel Bergstein, assignor to Robert M. and Frank D. Bergstein, Cincinnati, Ohio, as trustees. Filed Feb. 23, 1945. 7 claims. (Cl. 117-60). A light superficial film of water is applied to the surface of paper and immediately thereafter a coating of molten wax is applied.

2,443,243. Paper roll shaft. William A. Hayssen, assignor to Hayssen Manufacturing Company, Sheboygan, Wis. Filed Feb. 9, 1945. 3 claims. (Cl. 242-72).

2,443,256. Packaging receptacle. Samuel N. Lebold, assignor to Morris Paper Mills, Chicago, Ill. Filed April 20, 1944. 2 claims. (Cl. 229-28).

2,443,327. Method of packaging and machine therefor. Leroy L. Salfisberg, assignor to Ivers-Lee Company, Newark, N. J. Filed Aug. 1, 1944. 12 claims. (Cl. 93-3). A method of packaging articles that are capable of being deformed without injury thereto.

2,443,352. Suction press section for paper machines. Lloyd Hornbostel, assignor to Beloit Iron Works, Beloit, Wis. Filed March 11, 1944. 6 claims. (Cl. 92-49). The invention relates to the press section of a paper machine for the production of tissue papers. Because of the higher pressures employed, the number of press roll assemblies can be reduced.

2,443,366. Papermaking machine. Elmer J. Worden, Kalamazoo, Mich. Filed March 6, 1944. 7 claims. (Cl. 92-49). To remove the water which is separated from the web by the press rolls, nozzle members are positioned above the bottom felt and closely adjacent thereto, with their tips placed at the rear of and closely adjacent to the nip of the rollers, so that the water is discharged or removed by jets or blasts of air issuing from the nozzles.

2,443,428. Carton. Russell A. Lambert, assignor to Brooks Bank Note Company, Springfield, Mass. Filed May 3, 1945. 3 claims. (Cl. 229-39).

2,443,431. Container structures for liquid, semiliquid, and freely flowable products, especially food products to be froqzen. William A. Ringler, assignor to The Gardner-Richardson Company, Middletown, Ohio. Filed June 23, 1943. 1 claim. (Cl. 229-31).

2,443,530. Carton for ice cream and the like. Samuel H. Berch, Beverly Hills, Calif. Filed Oct. 31, 1944. 4 claims. (Cl. 229-26).

2,443,531. Carton for food products. Samuel H. Berch, Beverly Hills, Calif. Filed July 12, 1947. 2 claims. (Cl. 229-31). A container for a brick of ice cream or the like.

JUNE 22, 1948

2,443,713. Folding paper box. Wilbur G. Anderson, Jr., assignor to American Box Board Company, Grand Rapids, Mich. Filed Nov. 24, 1947. 7 claims. (Cl. 229-23).

2,443,795. Citrus wrapper. John R. MacRill and Robert A. Baum, assignors to Fernstrom Paper Mills, Inc., Pomona, Calif. Filed June 19, 1945. 6 claims. (Cl. 117-154). Tissue paper is impregnated with a solution of paraffin in mineral oil which contains from 0.6 to 1.8% of alpha-terpineol based on the bone-dry weight of the paper.

2,443,889. Adhesive of water-remoistenable type from lignin sulfonic acid and polyvinyl alcohol. Donald S. Bruce and Howard L. Heise, assignors to Gummed Products Company, Troy, Ohio. Filed Aug. 20, 1946. 6 claims. (Cl. 260-17.5). The adhesive contains at least 3% of polyvinyl alcohol and at least 75% of a concentrate of waste sulphite waste liquor containing lingnosulphonic acids (proportions on a dry basis).

JUNE 29, 1948

R23,013. Method of improving the processing of refined chemical pulp into viscose. Paul H. Schlosser and Kenneth R. Gray, assignors to Rayonier Incorporated, Shelton, Wash. Original No. 2,432,127, dated Dec. 9, 1947. Application for reissue March 31, 1948. 25 claims. (Cl. 260-217). A pulp containing not more than 0.15% ether-extractable matter and suitable for conversion into viscose is improved by the addition, at a stage prior to completion of shredding, of a cation-active amino compound (0.01 to 0.2% on the bone-dry weight of the pulp).

2,444,022. Process of making a solution of cellulose. Aart Buurman, assignor to American Enka Corporation, Enka, N. C. Filed Sept. 30, 1946. 11 claims. (Cl. 106-203). Hydrogen peroxide is added to a dilute alkaline zincate or stannate, cellulose is added to the mixture and, after sufficient degradation, the mixture is cooled to a temperature below 0° C., upon which the cellulose is dissolved immediately.

2,444,050. Machine for making box blanks. Cutler D. Knowlton and George F. C. Burke, assignors to Hoague-Sprague Corporation, Lynn,

Mass. Filed March 26, 1942. 106 claims. (Cl. 93-36.6).

2,444,094. Resin coated fiber base and process of making. Fred W. Duggan, assignor to Bakelite Corporation, New York, N. Y. Filed Aug. 4, 1943. 2 claims. (Cl. 154-97.5). The resin is an acetone-soluble copolymer of maleic acid, vinyl chloride, and vinyl acetate containing 0.5 to 10% by weight of maleic acid and 85-90% of vinyl chloride. The base is impregnated with this resin, after which a coating of a polyvinyl chloride is applied.

2,444,143. Paper bottle construction. Frank D. Palmer, assignor to Frank D. Palmer, Inc., Chicago, Ill. Filed Feb. 8, 1946. 9 claims. (Cl. 93-36.8). A method of closing a tubular container.

2,444,183. Fiberboard portable platform. Norman L. Cahners, Newton, Mass. Filed July 14, 1945. 20 claims. (Cl. 248-120). A pallet construction.

2,444,184. Expendable platform. Norman L. Cahners, Brewer, Maine. Filed April 12, 1946. 4 claims. (Cl. 248-120). A pallet construction.

Pacific TAPPI Third Seminar

The Pacific Section of the Technical Association of the Pulp and Paper Industry has announced its Third Annual Seminar. This year the subject will be "The Chemistry of Lignin and Noncarbohydrate Extractives of Wood. It will be under the leadership of Dr. Holger Erdtman and his wife and coworker Dr. G. Aulin-Erdtman. The Erdtmans have an international reputation in the fields of the chemistry of lignin and wood extractives.

The seminar will be held at Bagley Hall, University of Washington, Seattle, Wash. on August 30-31 and at the Multnomah Hotel, Portland, Ore. on September 2-3, 1948.

This seminar will be open to all who may be interested. Inquiries should be sent to Mr. R. M. True, General Dyestuff Corporation, 1102 Terminal Sales Bldg., Portland 5, Ore. A fee of $10. to defray expenses will be charged.

The previous seminars have been conducted by Drs. Emil Heuser and Herman Mark. The probable content of the lectures will be: Lignin in woods; its observation, characteristics, location, reactions and genesis; Organic and physical chemistry of reactions accomplishing removal of lignin from wood and cellulose; Methods for the isolation of lignin; Structure properties, reactions, uses, and derivatives of isolated lignin; Some noncarbohydrate extractives of woods; Location in woods, isolation, characteristics, uses, structures, reactions, and derivatives.

TAPPI Notes

The following changes have been made in the TAPPI Plastics Conference Program (Appleton, Wis., August 16-17, 1948):

The paper on "Adhesion of Resins to Fibers" by D. N. Powers has been withdrawn. In its place will be a paper by R. L. Steller of the B. F. Goodrich Company on "Adhesion of Vinyl Polymers and Aerylonitrile-Butadiene Copolymers to Cellulose."

The papers on "Vinyl and Vinyldiene Polymers" by G. H. Alexander of B. F. Goodrich Company and on "Adhesion of Rubbers to Cellulose" by J. Compton of Goodrich have been withdrawn.

The following papers have been added: "Fundamental Aspects of Plastics to Fiber Adhesion," by Herman Mark, Polytechnic Institue of Brooklyn.

"Technical Aspects of the Adhesion of Phenolic Resin to Cellulose," by C. J. Straka, Westinghouse Electric Corporation, Micarta Division.

On August 17th the paper on "Water Dispersed Coatings," will be given by E. B. Osborne, B. F. Goodrich Company, instead of R. M. Upright of the Dow Chemical Company.

Chemistry of Organic Pigments

John Wiley & Sons, Inc. recently issued "The Chemistry and Physics of Organic Pigments," by Lyde S. Pratt of the Calco Chemical Division, American Cyanamid Company (359 pp. 6 x 9¼).

This is a book of interest to those in the color producing and consuming industries. It contains theoretical consideration of the relation between color, and chemical and physical structure, the raw materials for synthetic organic pigments, intermediates, pigments from natural organic colors, testing of pigments, pigment types and properties.

Once it was customary for consumers to use pigments without knowledge of their individual characteristics, aside from tinctorial values. However, because of insistent demand for uniformity, changing raw materials, fluctuating formulations, and new techniques of application to paper and other materials, it has become essential for consumers to become familiar with the chemical and physical properties of pigments. This book helps to bring together information that has been so widely scattered in the literature as to be of little value.

Copies may be obtained from the Book Department, Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y. at $6.00 per copy.

Forest Products Research Guide

The National Lumber Manufacturers Association has issued the third edition of its Forest Products Research Guide.

This book of 261 pages, lithographed from manuscripts, is entirely an index to the available sources of information concerning wood and primary products made from wood. It was prepared to aid in the correlation of forest products research and to help prevent unnecessary duplication of research activities.

Among the fields covered are: Structure, Identification and Properties of Wood; Processes, Materials, and Devices Used with Wood to Improve or Modify Its Properties in Use; Primary Timber and Lumber Products; Buildings, Building Parts, and Other Structures; Fabricated Wood Products; Chemicals and Chemical Products, including Pulp and Paper; Published Information on Forest Products Utilization; Lists of Research Agencies.

Copies may be purchased from the National Lumber Manufacturers Association, Committee on Products and Research, 1319 Eighteenth Street, Washington, D. C. at $5.00 per copy.

Forest Influences

The McGraw-Hill Book Company has just issued "Forest Influences" by Joseph Kittredge, Professor of Forestry, University of California (394 pp. 6 x 9).

This book deals with the effects of woody vegetation on climate, water, and soil, with applications to the conservation of water and the control of floods and erosion.

Among the subjects covered are: History and development; measures of foliate; solar radiation and light; air temperature; wind; atmospheric pressure; precipitation, fog drip, evaporation and condensation; snow; soil temperature and moisture; litter and forest floor; runoff and stream flow; floods, erosion; and watershed management.

Copies may be obtained from the Book Department, Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y. at $4.50 per copy.

New TAPPI Members

The executive Committee of the Technical Assn., of the Pulp & Paper Industry has elected the following to membership:

Joseph J. Schwenkler, Assistant to Research Director, Container Corp. of America, Philadelphia, Pennsylvania, a 1943 graduate of the New York State College of Forestry, with an M.S. degree in 1947.

Frederic L. Matthews, Director of Research, Monsanto Chemical Co., Merrimac Div., Everett, Massachusetts, a 1939 graduate of Columbia University with Ph. D. degree.

James C. Morris, Manager, Research and Development Dept., The Ohio Boxboard Co., Rittman, Ohio, a 1937 graduate of Wittenberg College.

Raoul L. Naville, Technical Director, Pavag A/G, Zurich, Switzerland.

A. Hugh Rutt, Managing Director, Grosvenor, Chater & Co. Ltd., Abbey Paper Mills, Holywell, Flintshire, England, a 1920 graduate of Eastbourne College.

Alexander T. Williams, Vice-President, Hearst Enterprises, Inc., New York City.

Ronald S. Wilson, Chemist, British Columbia Pulp and Paper Co., Vancouver, B. C., Canada, a 1939 graduate of the University of British Columbia.

Harry B. Conner, superintendent of Electro-Chemical Production, Oxford Paper Co., Rumford, Maine, a 1937 graduate of the University of Maine.

Pierre Dutilloy, general manager, Pulp & Paper Syndicate, Paris, France, a 1919 graduate of Ecole Nationale des Eaux et Forets.

Matti J. Jalkanen, mill manager, Rauma-Raahe Oy, Rauma, Finland, a 1933 graduate of the Technical Institute of Helsinki.

Francis R. Loetterle, division supervisor, National Starch Products Co., Chicago, a 1940 graduate of the University of Nebraska.

Edward J. Monahan, chemist and assistant manager, Packaging Division, National Biscuit Co., New York City, a 1942 graduate of Notre Dame University.

Robert D. Parsons, graduate student, University of Maine, Orono, Maine, a 1944 graduate of Pennsylvania State College.

Geza J. Vayda, superintendent, Industrias-Klabin de Parana de Cellulosa S.A., Parana, Brazil, a 1938 graduate of Fachhochschule, Altenburg, Germany.

(104) Report of TAPPI Nominating Committee

The Nominating Committee of the Technical Ass'n. of the Pulp and Paper Industry, consisting of H. H. Brown, Chairman, W. A. Chilson, Milton Fillius, F. B. Grunwald, and R. H. Mosher, have presented the following nominees for officers and executive committeemen to be voted on prior to the TAPPI annual meeting in 1949.

President (one year) Albert E. Bachmann, Missisquoi Corp., Sheldon Springs, Vt.
Vice-President (one year) Kenneth P. Geohegan, Howard Paper Mills, Inc., Dayton, Ohio.
Executive Committeemen (three years):
James d'A. Clark, Consulting Engineer, Longview, Wash.
Martin L. Downs, Thilmany Pulp and Paper Co., Kaukauna, Wis.
Werner Kaufmann, Kupfer Bros. Co., New York, N. Y.
George H. Pringle, Mead Corp., Chillicothe, Ohio.

Note: Article VII, Sec. 3, TAPPI Constitution: "Other nominations, if signed by at least 25 voting members, may be submitted to the Secretary of the Association, in writing, on or before November 20, 1948, and if each nomination so made is accepted, in writing, by the nominee, the same shall be placed on the official ballot."

TAPPI Medal Presented to Emil Heuser

The 1948 TAPPI Medal, presented to an individual who has made an outstanding contribution to the technical advancement of the pulp and paper industry, was awarded to Dr. Emil Heuser.

This presentation is generally made at the annual meeting luncheon of the Technical Association of the Pulp and Paper Industry. Late in 1947 Dr. Heuser retired from the staff of the Institute of Paper Chemistry and moved to Downey, California. He was therefore unable to be present at the TAPPI February meeting to receive the medal.

The TAPPI Pacific Section was commissioned to arrange for the personal presentation at a time convenient to Dr. Heuser. This was accomplished at a dinner for him at the Jonathan Club in Los Angeles on June

Dr. Emil Heuser

28th. The dinner was attended by the Medallist, Mrs. Heuser, their son Dietrich Heuser and his wife, Dr. and Mrs. J. A. Van den Akker of the Institute of Paper Chemistry and H. A. Des Marais of the General Dyestuff Company.

The presentation was made by Mr. Des Marais, a member of Pacific TAPPI on behalf of the Technical Association.

Dr. Heuser graciously responded and wished the Technical Association members to know that he greatly appreciated this recognition and honor.

TAPPI Notes

Michael J. Goloff, formerly of the Consolidated Paper Corporation, is now plant engineer for the St. Regis Paper Company, Kalamazoo, Mich.

Alfred J. Askin, formerly of the Marathon Paper Mills of Canada, Ltd., is now junior engineer for the Spruce Falls Power & Paper Company, Ltd., Kapuskasing, Ontario.

Joseph E. Atchison, formerly of the John Strange Paper Company, is now in the Pulp and Paper Section, Economic Cooperation Administration, 800 Connecticut Ave., Washington, D. C.

Max M. Kline, formerly of Timefax, Inc., is now research chemist for the Behr-Manning Corporation, Troy, N. Y.

Ivan F. Wieland has succeeded C. H. Davidson as the official representative of A. E. Staley Mfg. Company, Decatur, Ill., in the Technical Association.